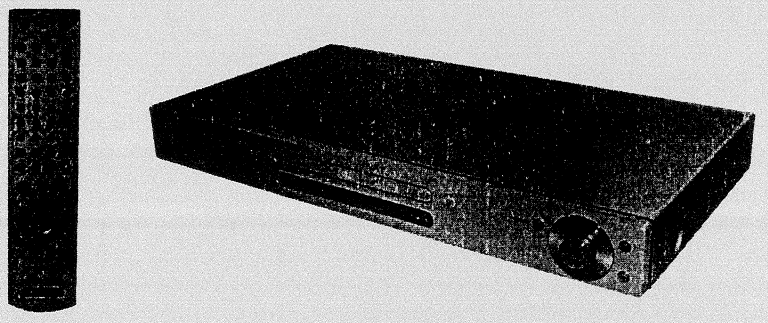
DVP-LS785V

RMT-D171P

SERVICE MANUAL

AEP Model
UK Model
Middle East Model



SPECIFICATIONS

System
Laser: Semiconductor laser
Signal format system: PAL/NTSC
(See page 19 to switch)

Audio characteristics
Frequency response: DVD VIDEO
(PCM 96 kHz): 2 Hz to 44 kHz
(44 kHz: –2 dB ±1 dB)/
Super Audio CD: 2 Hz to 100 kHz
(50 kHz: –3 dB ±1 dB)/
CD: 2 Hz to 20 kHz (±0.5 dB)
Signal-to-noise ratio (S/N ratio): 115 dB
(LINE OUT L/R (AUDIO) jacks only)
Harmonic distortion: 0.003%
Dynamic range: DVD VIDEO/
Super Audio CD: 103 dB/CD: 99 dB
Wow and flutter: Less than detected value
(±0.001% W PEAK)

Outputs
(Jack name: Jack type/Output level/
Load impedance)
LINE OUT (AUDIO): Phono jack/
2 Vrms/ 10 kilohms
5.1CH OUTPUT: Phono jack/
2 Vrms/ 10 kilohms
DIGITAL OUT (OPTICAL):
Optical output jack/–18 dBm (wave
length 660 nm)
DIGITAL OUT (COAXIAL): Phono jack/
0.5 Vp-p/75 ohms
COMPONENT VIDEO OUT
(Y, P_B/C_B, P_R/C_R): Phono jack/
Y: 1.0 Vp-p, P_B/C_B,
P_R/C_R: 0.7 Vp-p/75 ohms
LINE OUT (VIDEO): Phono jack/
1.0 Vp-p 75 ohms
S VIDEO OUT: 4-pin mini DIN/Y:
1.0 Vp-p, C: 0.3 Vp-p (PAL),
0.286 Vp-p (NTSC)/75 ohms

General
Power requirements:
110 – 240 V AC, 50/60 Hz

Power consumption: 12 W
Dimensions (approx.):
(width/height/depth) incl. projecting
parts
DVP-LS785V: 430 × 55.5 × 245 mm
Mass (approx.):
DVP-LS785V: 2.1 kg
Operating temperature: 5°C to 35°C
Operating humidity: 25% to 80%

Supplied accessories
See page 17

Specifications and design are subject to change without notice.

ENERGY STAR® is a U.S. registered mark. As an ENERGY STAR® Partner, Sony Corporation has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

DVD VIDEO COMPACT disc DIGITAL VIDEO

CD/DVD PLAYER

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion.
   Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

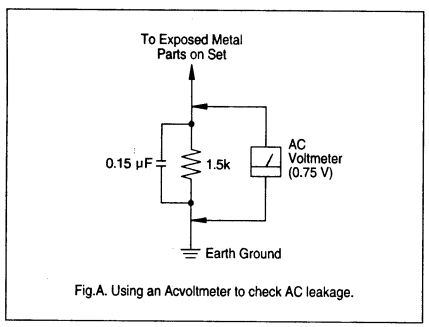


Fig.A. Using an Acvoltmeter to check AC leakage.

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

CAUTION:

The use of optical instrument with this product will increase eye hazard.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC volmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

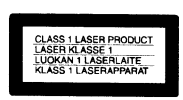
Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C highter than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.



ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!
LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

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SERVICE NOTE

1. DISC REMOVAL PROCEDURE (at POWER OFF)

1) Open dust cover to access to a hole insert a tapering driver into the aperture of the unit bottom, and move the lever of chuck can in the direction of the arrow A. (See Fig. 1)
2) Draw out the tray in the direction of the arrow B, and remove a disc. (See Fig. 1)

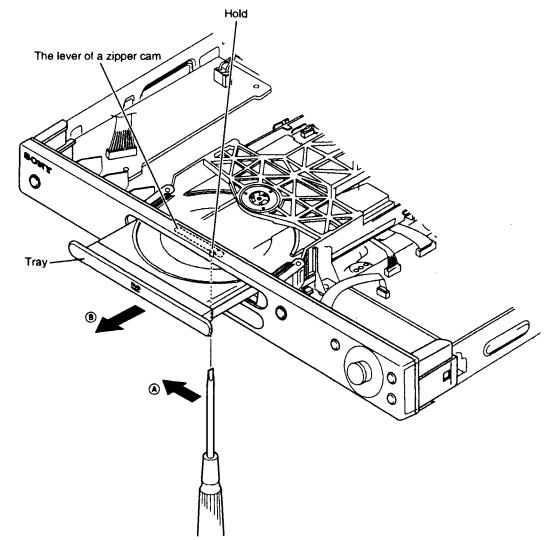


Fig. 1.

MEMO

SECTION 1 GENERAL

This section is extracted from instruction manual. 2-059-561-31

Precautions

On safety

- Should any solid object or liquid fall into the cabinet, unplug the player and have it checked by qualified personnel before operating it any further.

On power sources

- The player is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the player itself has been turned off.
- If you are not going to use the player for a long time, be sure to disconnect the player from the wall outlet. To disconnect the AC power cord (mains lead), grasp the plug itself; never pull the cord.

On placement

- Place the player in a location with adequate ventilation to prevent heat build-up in the player.
- Do not place the player on a soft surface such as a rug.
- Do not place the player in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.

On operation

- If the player is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the player. Should this occur, the player may not operate properly. In this case, remove the disc and leave the player turned on for about half an hour until the moisture evaporates.
- When you move the player, take out any discs. If you don't, the disc may be damaged.

On adjusting volume

Do not turn up the volume while listening to a section with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level section is played.

On cleaning

Clean the cabinet, panel, and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

On cleaning discs

Do not use a commercially available cleaning disc. It may cause a malfunction.

IMPORTANT NOTICE

Caution: This player is capable of holding a still video image or on-screen display image on your television screen indefinitely. If you leave the still video image or on-screen display image displayed on your TV for an extended period of time you risk permanent damage to your television screen. Plasma display panel televisions and projection televisions are susceptible to this.

If you have any questions or problems concerning your player, please consult your nearest Sony dealer.

3

About This Manual

Check your model name

The instructions in this manual are for 2 models: DVP-NS780V and DVP-LS785V. Check your model name by looking at the front panel of the player. The Oceanian DVP-NS780V model is used for illustration purposes unless otherwise specified. Any difference in operation is clearly indicated in the text, for example, "DVP-NS780V only" or "Oceanian models only." Displays also may differ slightly depending on the region model and the model name.

- Instructions in this manual describe the controls on the remote. You can also use the controls on the player if they have the same or similar names as those on the remote.
- "DVD" may be used as a general term for DVD VIDEOs, DVD+RWs/DVD+Rs and DVD-RWs/DVD-Rs.
- The meaning of the icons used in this manual is described below:

Icons	Meanings
DVD-V	Functions available for DVD VIDEOs and DVD+RWs/DVD+Rs or DVD-RWs/DVD-Rs in video mode
DVD-RW	Functions available for DVD-RWs in VR (Video Recording) mode
VCD	Functions available for VIDEO CDs (including Super VCDs or CD-Rs/CD-RWs in video CD format or Super VCD format)
SA-CD	Functions available for Super Audio CDs
CD	Functions available for music CDs or CD-Rs/CD-RWs in music CD format
DATA CD	Functions available for DATA CDs (CD-ROMs/CD-Rs/CD-RWs containing MP3*1 audio tracks, JPEG image files and DivX*2*3 video files)
DATA DVD	Functions available for DATA DVDs (DVD-Rs/DVD-RWs/DVD+Rs/DVD+RWs) containing DivX*2*3 video files.

*1 MP3 (MPEG1 Audio Layer 3) is a standard format defined by ISO (International Organization for Standardization/MPEG which compresses audio data.

*2 DivX® is a video file compression technology, developed by DivXNetworks, Inc.

*3 DivX, DivX Certified, and associated logos are trademarks of DivXNetworks, Inc. and are used under license.

6

This Player Can Play the Following Discs

Format of discs	
DVD VIDEO (page 92)	DVD VIDEO
DVD-RW (page 92)	DVD RW
Super Audio CD (page 92)	SUPER AUDIO CD
VIDEO CD	DIGITAL VIDEO
Music CD	DIGITAL AUDIO

"DVD VIDEO" and "DVD RW" are trademarks.

Note about CDs/DVDs

The player can play CD-ROMs/CD-Rs/CD-RWs recorded in the following formats:
- music CD format
- video CD format
- MP3 audio tracks, JPEG image files, and DivX video files of format conforming to ISO 9660* Level 1/Level 2, or its extended format, Joliet
- KODAK Picture CD format

* A logical format of files and folders on CD-ROMs, defined by ISO (International Organization for Standardization).

The player can play DVD-ROMs/DVD+RWs/DVD-RWs/DVD+Rs/DVD-Rs recorded in the following formats:
- DivX video files of format conforming to UDF.

Example of discs that the player cannot play

The player cannot play the following discs:
- CD-ROMs/CD-Rs/CD-RWs other than those recorded in the formats listed on the previous page.
- CD-ROMs recorded in PHOTO CD format.
- Data part of CD-Extras.
- DVD-Audios.
- DVD-Rs/DVD-RWs/DVD+Rs/DVD+RWs that do not contain any DivX video files.

Also, the player cannot play the following discs:
- A DVD VIDEO with a different region code.
- A disc that has a non-standard shape (e.g., card, heart).
- A disc with paper or stickers on it.
- A disc that has the adhesive of cellophane tape or a sticker still left on it.

Region code

Your player has a region code printed on the back of the unit and only will play DVD VIDEOs (playback only) labelled with identical region codes. This system is used to protect copyrights.

DVD VIDEOs labelled (ALL) will also play on this player.

If you try to play any other DVD VIDEO, the message "Playback prohibited by area limitations." will appear on the TV screen. Depending on the DVD VIDEO, there may be no region code indication, even though playing the DVD VIDEO is prohibited by area restrictions.

➡continued 7

Notes

- **Notes about DVD+RWs/DVD+Rs, DVD-RWs/DVD-Rs or CD-Rs/CD-RWs**
  Some DVD+RWs/DVD+Rs, DVD-RWs/DVD-Rs, or CD-Rs/CD-RWs cannot be played on this player due to the recording quality or physical condition of the disc, or the characteristics of the recording device and authoring software.
  The disc will not play if it has not been correctly finalized. For more information, refer to the operating instructions for the recording device.
  Note that some playback functions may not work with some DVD+RWs/DVD+Rs, even if they have been correctly finalized. In this case, view the disc by normal playback. Also some DATA CDs/DATA DVDs created in Packet Write format cannot be played.
- **Music discs encoded with copyright protection technologies**
  This product is designed to playback discs that conform to the Compact Disc (CD) standard. Recently, various music discs encoded with copyright protection technologies are marketed by some record companies. Please be aware that among those discs, there are some that do not conform to the CD standard and may not be playable by this product.
- **Non-Oceanian models only**
  Images in DVD-RWs with CPRM* protection may not be played if they contain a copy protection signal "Copyright lock" appears on the screen.

* CPRM (Content Protection for Recordable Media) is a coding technology that protects the copyright of images.

Note on playback operations of DVDs and VIDEO CDs

Some playback operations of DVDs and VIDEO CDs may be intentionally set by software producers. Since this player plays DVDs and VIDEO CDs according to the disc contents the software producers designed, some playback features may not be available. Also, refer to the instructions supplied with the DVDs or VIDEO CDs.

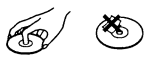
8

Copyrights

This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of this copyright protection technology must be authorized by Macrovision, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

Notes About the Discs

- To keep the disc clean, handle the disc by its edge. Do not touch the surface.



- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a car parked in direct sunlight as the temperature may rise considerably inside the car.
- After playing, store the disc in its case.
- Clean the disc with a cleaning cloth. Wipe the disc from the centre out.

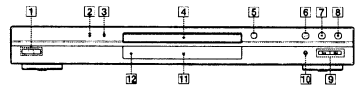
- Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for vinyl LPs.
- If you have printed the disc's label, dry the label before playing.

Index to Parts and Controls

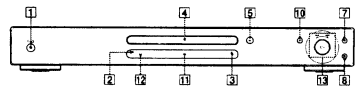
For more information, see the pages indicated in parentheses.

Front panel

DVP-NS780V



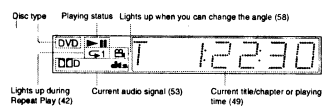
DVP-LS785V



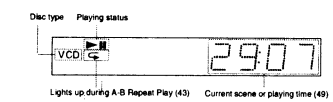
1 I/⏻ (on/standby) button (33)
2 SUPER AUDIO CD indicator (38, 92)
Lights up when:
– playing an HD (High Density) layer of Super Audio CDs.
– no disc is inserted.
3 MULTI CHANNEL indicator (38, 92)
Lights up when:
– playing a disc that contains multiple audio signal channels.
– no disc is inserted.
4 Disc tray (33)
5 ⏏ (open/close) button (33)
6 ▷ (play) button (33) (DVP-NS780V only)
7 ❚❚ (pause) button (34)
8 ■ (stop) button (34)
9 ⏮/⏭ (previous/next) buttons (44) (DVP-NS780V only)
10 PROGRESSIVE button/indicator (20)
Lights up when the player outputs progressive signals.
11 Front panel display (11)
12 ■ (remote sensor) (17)
13 ▷ (play)/Playback Dial (DVP-LS785V only) (33, 44, 45)

Front panel display

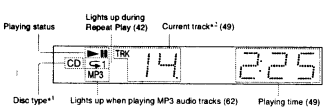
When playing back a DVD VIDEO/DVD-RW


Disc type
Playing status
Lights up when you can change the angle (58)
DVD
Lights up during Repeat Play (42)
Current audio signal (53)
Current title/chapter or playing time (49)

When playing back a VIDEO CD with Playback Control (PBC) (39)



When playing back a Super Audio CD, CD, DATA DVD (DivX video), DATA CD (MP3 audio/ DivX video), or VIDEO CD (without PBC)

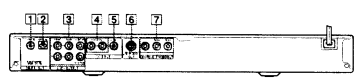


*1 When playing the HD layer of Super Audio CDs, the disc type is not displayed.
*2 When playing DivX video files, the current track is not displayed.

Hint
You can adjust the lighting of the front panel display by setting "DIMMER" in "CUSTOM SETUP." (page 82)

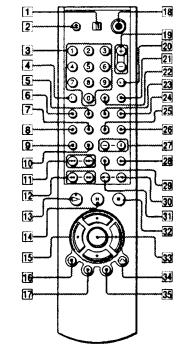
➡continued

Rear panel



1 DIGITAL OUT (COAXIAL) jack (25) (26) (27)
2 DIGITAL OUT (OPTICAL) jack (25) (26) (27)
3 5.1CH OUTPUT jacks (27)
4 LINE OUT L/R (AUDIO) jacks (24) (25) (26)
5 LINE OUT (VIDEO) jack (18)
6 S VIDEO OUT jack (18)
7 COMPONENT VIDEO OUT (Y, Pb/Cb, Pr/Cr) jacks (18)

Remote



1 TV/DVD switch (77)
2 ⏏ (open/close) button (34)
3 Number buttons (36)
The number 5 button has a tactile dot.*
4 CLEAR/-/-- (ten digits) button (40)
5 ▭ (subtitle) button (58)
6 ▭ (audio) button (52)
7 REPEAT button (42)
8 SHUFFLE button (41)
9 SA-CD MULTI/2CH button (38)
10 SA-CD/CD button (38)
11 ⏮/⏭ (previous/next) buttons (34)
12 ◂❚ ◂◂/▸▸ ❚▸ (scan/slow) buttons (45)
13 ▷ (play) button (33)
The ▷ button has a tactile dot.*
14 ❚❚ (pause) button (34)
15 ←/↑/↓/→ buttons (36)
16 DISPLAY button (14)
17 TOP MENU button (36)
18 I/⏻ (on/standby) button (33)
19 ◂ (volume) +/– buttons (77)
The + button has a tactile dot.*
20 ⏻ (TV/video)/TIME/TEXT button (49)
21 PICTURE MODE button (59)
22 ENTER button (29)
23 (angle) button (58)
24 SUR (surround) button (54)
25 A-B button (43)
26 SEARCH MODE button (46)
27 ALBUM +/– button (34, 64)
28 PICTURE NAVI button (47, 65)
29 ZOOM button (34, 65)
30 ▸▸/⏭ (instant advance/step) button (34, 45)
31 ⏮/◂◂ (instant replay/step) button (34, 45)
32 ■ (stop) button (34)
33 ENTER button (29)
34 ↶ RETURN button (34)
35 MENU button (36) (63)

* Use the tactile dot as a reference when operating the player.

List of Control Menu items

Item	Item Name, Function, Relevant Disc Type
	TITLE (page 46)/SCENE (page 46)/TRACK (page 46) Selects the title, scene, or track to be played. DVD V DVD RW VCD
	CHAPTER (page 46)/INDEX (page 46) Selects the chapter or index to be played. DVD V DVD RW VCD
*	**TRACK (page 46)** Selects the track to be played. SA CD CD DATA CD
	ORIGINAL/PLAY LIST (page 37) Selects the type of titles (DVD-RW) to be played, the ORIGINAL one, or an edited PLAY LIST. DVD RW
	TIME/TEXT (page 46) Checks the elapsed time and the remaining playback time. Input the time code for picture and music searching. Displays the DVD/Super Audio CD/CD text, or the DATA DVD/DATA CD track or file name. DVD V DVD RW VCD SA CD CD DATA CD DATA DVD
	MULTI/2CH (page 38) Selects the playback area on Super Audio CDs when available. SA CD
	PROGRAM (page 40) Selects the title, chapter, or track to play in the order you want. DVD V VCD SA CD CD
	SHUFFLE (page 41) Plays the title, chapter, or track in random order. DVD V VCD SA CD CD
	REPEAT (page 42) Plays the entire disc (all titles/all tracks/all albums) repeatedly or one title/chapter/track/album/file repeatedly. DVD V DVD RW VCD SA CD CD DATA CD DATA DVD
	A-B REPEAT (page 43) Specifies the parts you want to play repeatedly. DVD V DVD RW VCD CD
	SHARPNESS (page 61) Exaggerates the outline of the image to produce a sharper picture. DVD V DVD RW VCD DATA CD DATA DVD
	PARENTAL CONTROL (page 73) Set to prohibit playback on this player. DVD V VCD SA CD CD
	SETUP (page 79) QUICK Setup (page 29) Use Quick Setup to choose the desired language of the on-screen display, the aspect ratio of the TV, the audio output signal, and the size of the speaker you are using. CUSTOM Setup In addition to the Quick Setup setting, you can adjust various other settings. RESET Returns the settings in "SETUP" to the default setting. DVD V DVD RW VCD SA CD CD DATA CD DATA DVD
	ALBUM (page 62) Selects the album to be played. DATA CD DATA DVD
	FILE (page 46) Selects the JPEG image file or DivX video file to be played. DATA CD DATA DVD
*	**DATE (page 65)** Displays the date the picture was taken by a digital camera. DATA CD

➡continued

Guide to the Control Menu Display

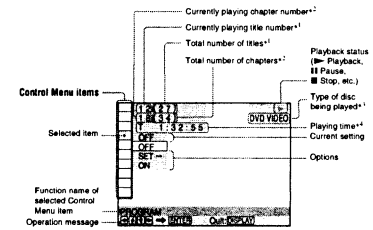
Use the Control Menu to select a function and to view related information. Press DISPLAY repeatedly to turn on or change the Control Menu display as follows:

Control Menu display 1
↓
Control Menu display 2 (Only for DATA CDs without DivX video files)
↓
Control Menu display off

Control Menu display

The Control Menu display 1 and 2 will show different items depending on the disc type. For details about each item, see the pages in parentheses.

Example: Control Menu display 1 when playing a DVD VIDEO.



*1 Displays the scene number for VIDEO CDs (PBC is on), track number for VIDEO CDs/ Super Audio CDs/CDs, album number for DATA DVDs/DATA CDs.
*2 Displays the index number for VIDEO CDs/ Super Audio CDs, MP3 audio track number or JPEG image file number for DATA CDs, DivX video file number for DATA DVDs.
*3 Displays Super VCD as "SVCD."
*4 Displays the date for JPEG files.

To turn off the display
Press DISPLAY.

*	**INTERVAL (page 68)** Specifies the duration for which the slides are displayed on the screen. DATA CD
*	**EFFECT (page 68)** Selects the effects to be used for changing slides during a slide show. DATA CD
*	**MODE (MP3, JPEG) (page 67)** Selects the data type, MP3 audio track (AUDIO), JPEG image file (IMAGE) or both (AUTO) to be played when playing a DATA CD. DATA CD

* These items are not displayed when playing a DATA CD with DivX video file

Hint
The Control Menu icon indicator lights up in green ([ ] → [ ]) when you select any item except "OFF," "PROGRAM," "SHUFFLE," "REPEAT," "A-B REPEAT," "SHARPNESS" only). The "ORIGINAL/PLAY LIST" indicator lights up in green when you select "PLAY LIST" (default setting). The "MULTI/2CH" indicator lights up in green when you select the multi-channel playback area on a Super Audio CD.

Hooking Up the Player

Follow steps 1 to 6 to hook up and adjust the settings of the player.

Notes

- Plug cords securely to prevent unwanted noise.
- Refer to the instructions supplied with the components to be connected.
- You cannot connect this player to a TV that does not have a video input jack.
- Be sure to disconnect the mains lead of each component before connecting.

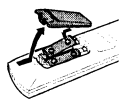
Step 1: Unpacking

Check that you have the following items:

- Audio/Video cord (pinplug × 3 ⟷ pinplug × 3) (1)
- Remote commander (remote) (1)
- R6 (size AA) batteries (2)

Step 2: Inserting Batteries Into the Remote

You can control the player using the supplied remote. Insert two R6 (size AA) batteries by matching the ⊕ and ⊖ ends on the batteries to the markings inside the compartment. When using the remote, point it at the remote sensor ■ on the player.

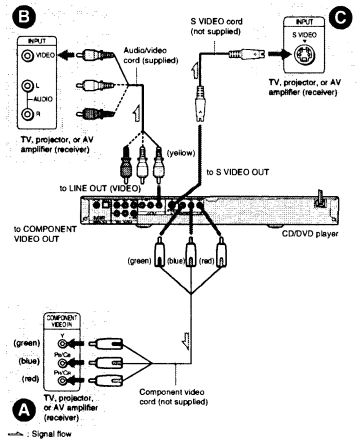


Notes

- Do not leave the remote in an extremely hot or humid place.
- Do not drop any foreign object into the remote casing, particularly when replacing the batteries.
- Do not expose the remote sensor to direct light from the sun or a lighting apparatus. Doing so may cause a malfunction.
- If you do not use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.

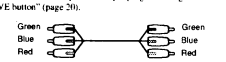
Step 3: Connecting the Video Cords

Connect this player to your TV monitor, projector, or AV amplifier (receiver) using a video cord. Select one of the patterns A through C, according to the input jack on your TV monitor, projector, or AV amplifier (receiver).
In order to view progressive signal (525p or 625p) pictures with a compatible TV, projector, or monitor, you must use pattern A.



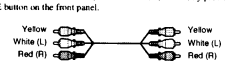
A If you are connecting to a monitor, projector, or AV amplifier (receiver) having component video input jacks (Y, P_B/C_B, P_R/C_R)

Connect the component via the COMPONENT VIDEO OUT jacks using a component video cord (not supplied) or three video cords (not supplied) of the same kind and length. You will enjoy accurate colour reproduction and high quality images.
If your TV accepts progressive 525p/625p format signals, use this connection and press the PROGRESSIVE button on the front panel to output progressive signals. For details, see "Using the PROGRESSIVE button" (page 20).



B If you are connecting to a video input jack

Connect the yellow plug of an audio/video cord (supplied) to the yellow (video) jack. You will enjoy standard quality images.
With this connection, select "NORMAL (INTERLACE)" (default) by pressing the PROGRESSIVE button on the front panel.



C If you are connecting to an S VIDEO input jack

Connect an S VIDEO cord (not supplied). You will enjoy high quality images.
With this connection, select "NORMAL (INTERLACE)" (default) by pressing the PROGRESSIVE button on the front panel.

When connecting to a wide screen TV

Depending on the disc, the image may not fit your TV screen. To change the aspect ratio, see page 81.

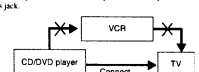
To change the colour system

If the on-screen menu of the player does not appear on the connected TV, switch the player's colour system to match the colour system of the TV (NTSC or PAL).
First turn off the player by pressing I/⏻, and then press I/⏻ again while holding down ■ on the player. The player turns back on, and the name of the colour system scrolls across the front panel display.

→continued 19

Notes

- Do not connect a VCR, etc., between your TV and the player. If you pass the player signals via the VCR, you may not receive a clear image on the TV screen. If your TV has only one audio/video input jack, connect the player to this jack.



- Consumers should note that not all high definition television sets are fully compatible with this product and may cause artifacts to be displayed in the picture. In case of 525 or 625 progressive scan picture problems, it is recommended that the user switch the connection to the 'standard definition' output. If there are questions regarding your TV set compatibility with this 525p and 625p DVD player model, please contact our customer service centre.

Using the PROGRESSIVE button

By using the PROGRESSIVE button on the front panel, you can select the signal format in which the player outputs video signals (Progressive or Interlace), and the conversion method for progressive signals. The PROGRESSIVE indicator lights up when the player outputs progressive signals.
Each time you press PROGRESSIVE, the display changes as follows:

PROGRESSIVE AUTO
↓
PROGRESSIVE VIDEO
↓
NORMAL (INTERLACE)

◆PROGRESSIVE AUTO
Select this setting when:
– your TV accepts progressive signals, and,
– the TV is connected to the COMPONENT VIDEO OUT jacks.
Normally select this under the above condition. This automatically detects the software type, and selects the appropriate conversion method.
Note that the picture will not be clear or no picture will appear if you select these settings when either of the above conditions is not met.

◆PROGRESSIVE VIDEO
Select this setting when:
– your TV accepts progressive signals, and,
– the TV is connected to the COMPONENT VIDEO OUT jacks, and
– you want to fix the conversion method to PROGRESSIVE VIDEO for video based software.
Select this if the image is not clear when you select PROGRESSIVE AUTO.
Note that the picture will not be clear or no picture will appear if you select these settings when either of the above conditions is not met.

◆NORMAL (INTERLACE)
Select this setting when:
– your TV does not accept progressive signals, or,
– your TV is connected to jacks other than the COMPONENT VIDEO OUT jacks (LINE OUT (VIDEO) or S VIDEO OUT).

◆About DVD software types and the conversion method
DVD software can be divided into two types: film based software and video based software. Video based software is derived from TV, such as dramas and sit coms, and displays images at 30 frames/60 fields per second. Film based software is derived from film and displays images at 24 frames per second. Some DVD software contains both video and film.
In order for these images to appear natural on your screen when output in progressive format, the progressive signals need to be converted to match the type of DVD software that you are watching.

Note

When you play video-based software in progressive signal format, sections of some types of images may appear unnatural due to the conversion process when output through the COMPONENT VIDEO OUT jacks. Images from the S VIDEO OUT and LINE OUT (VIDEO) jacks are unaffected as they are output in the normal (interlace) format.

Step 4: Connecting the Audio Cords

Refer to the chart below to select the connection that best suits your system. Be sure to also read the instructions for the components you wish to connect.

Select a connection

Select one of the following connections, A through D.

Components to be connected	Connection	Your setup (examples)
TV • Surround effects: – TVS DYNAMIC (page 54) – TVS WIDE (page 54)	A (page 24)	
Stereo amplifier (receiver) and two speakers • Surround effects: – TVS STANDARD (page 54) or **MD deck/DAT deck** • Surround effects: – TVS STANDARD (page 54)	B (page 25)	
AV amplifier (receiver) having a Dolby*1 Surround (Pro Logic) decoder and 3 to 6 speakers • Surround effects: – Dolby Surround (Pro Logic) (page 92)	C (page 26)	
AV amplifier (receiver) with 5.1 ch input jacks and 4 to 6 speakers • Surround effects: – Dolby Digital (5.1 ch) (page 92) – DTS (5.1 ch) (page 92) – Super Audio CD Multi channel (page 92) – MPEG audio (5.1 ch) (page 92) or **AV amplifier (receiver) with digital input jacks having a Dolby Digital, DTS*2, or MPEG audio decoder and 6 speakers** • Surround effects: – Dolby Digital (5.1 ch) (page 92) – DTS (5.1 ch) (page 92) – MPEG audio (5.1 ch) (page 92)	D (page 27)	

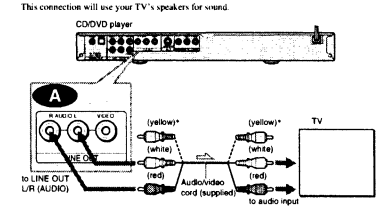
Hint

If you connect an AV amplifier (receiver) that conforms to the 96 kHz sampling frequency, use connection D.

*1 Manufactured under license from Dolby Laboratories. "Dolby," "Pro Logic," and the double-D symbol are trademarks of Dolby Laboratories.
*2 Manufactured under license from Digital Theater Systems, Inc. U.S. Pat. No's. 5,451,942; 5,956,674; 5,974,380; 5,978,762; 6,226,616; 6,487,535 and other U.S. and world-wide patents issued and pending. "DTS" and "DTS Digital Surround" are registered trademarks of Digital Theater Systems, Inc. Copyright 1996, 2003 Digital Theater Systems, Inc. All Rights Reserved.

A Connecting to your TV

This connection will use your TV's speakers for sound.



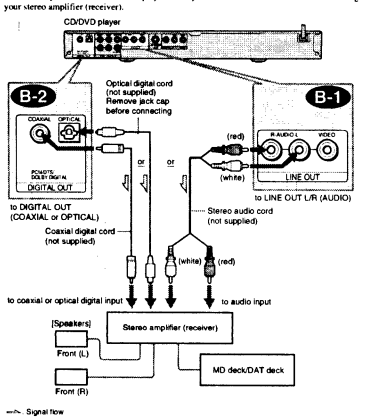
* The yellow plug is used for video signals (page 18).

Hint

When connecting to a monaural TV, use a stereo-mono conversion cord (not supplied). Connect the LINE OUT L/R (AUDIO) jacks to the TV's audio input jack.

B Connecting to a stereo amplifier (receiver) and 2 speakers/Connecting to an MD deck or DAT deck

If the stereo amplifier (receiver) has audio input jacks L and R only, use B-1. If the amplifier (receiver) has a digital input jack, or when connecting to an MD deck or DAT deck, use B-2. In this case, you can also connect the player directly to the MD deck or DAT deck without using your stereo amplifier (receiver).



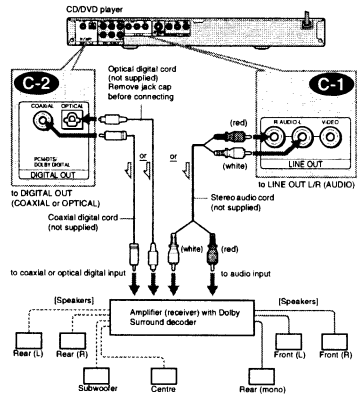
Note

Super Audio CD audio signals are not output from the DIGITAL OUT jacks.

→continued

C Connecting to an AV amplifier (receiver) having a Dolby Surround (Pro Logic) decoder and 3 to 6 speakers

You can enjoy Dolby Surround effects only when playing Dolby Surround audio or multi-channel audio (Dolby Digital) discs.
If your amplifier (receiver) has L and R audio input jacks only, use C-1. If your amplifier (receiver) has a digital input jack, use C-2.

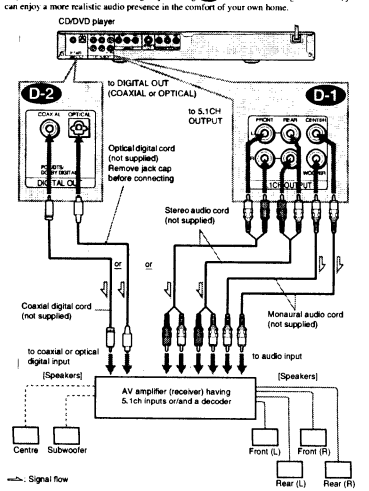


Notes

- When connecting 6 speakers, replace the monaural rear speaker with a centre speaker, 2 rear speakers and a subwoofer.
- Super Audio CD audio signals are not output from the DIGITAL OUT jacks.

D Connecting to an AV amplifier (receiver) with 5.1 ch input jacks and/or a digital input jack and 4 to 6 speakers

If your AV amplifier (receiver) has 5.1 channel inputs, use D-1.
If you want to use the Dolby Digital, MPEG audio, or DTS decoder function on your AV amplifier (receiver), connect to its digital jack using D-2. With the following connections, you can enjoy a more realistic audio presence in the comfort of your own home.



→continued

D-1: Connecting to the 5.1 ch input jacks

You can enjoy 5.1 ch surround sound using the internal Dolby Digital, MPEG audio, DTS, or Super Audio CD Multi decoder of this player. Note that 7.1 channel MPEG signals are mixed down to 5.1 channel signals.

D-2: Connecting to a DIGITAL OUT jack

This connection will allow you to use the Dolby Digital, MPEG audio, or DTS decoder function of your AV amplifier (receiver). You are not able to enjoy the surround sound effects of this player.

Hints

- **For connection D-2**
  For correct speaker location, refer to the operating instructions of the connected components.
- To enhance the sound performance:
  – Use high-performance speakers.
  – Use front, rear, and centre speakers of the same size and performance.
  – Place the subwoofer between the left and right front speakers.

Notes

For connection D-2

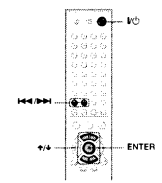
- After you have completed the connection, be sure to set "DOLBY DIGITAL" to "DOLBY DIGITAL" and "DTS" to "DTS" in Quick Setup (page 29). If your AV amplifier (receiver) has an MPEG audio decoder function, set "MPEG" in "AUDIO SETUP" to "MPEG".
- When you connect an amplifier (receiver) that conforms to the 96 kHz sampling frequency, set "48kHz/96kHz PCM" in "AUDIO SETUP" to "96kHz/24bit" (page 85).
- Super Audio CD audio signals are not output from the DIGITAL OUT jack.

Step 5: Connecting the Mains Lead

Plug the player and TV mains lead (power cord) into a mains.

Step 6: Quick Setup

Follow the steps below to make the minimum number of basic adjustments for using the player. To skip an adjustment, press ▶▶|. To return to the previous adjustment, press |◀◀. The on-screen displays differ depending on the player model. Oceanian model is used for illustration unless otherwise specified.



1 Turn on the TV.

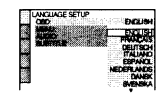
2 Press I/⏻.

3 Switch the input selector on your TV so that the signal from the player appears on the TV screen.

"Press [ENTER] to run QUICK SETUP" (press enter to run Quick Setup) appears at the bottom of the screen. If this message does not appear, select "QUICK" (quick) under "SETUP" (setup) in the Control Menu to run Quick Setup (page 80).

4 Press ENTER without inserting a disc.

The Setup Display for selecting the language used in the on screen display appears.
The available languages differ depending upon the player model.



5 Press ↑/↓ to select a language.

The player displays the menu and subtitles in the selected language.

→continued

6 Press ENTER.

The Setup Display for selecting the aspect ratio of the TV to be connected appears.

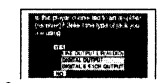
7 Press ↑/↓ to select the setting that matches your TV type.

◆ If you have a wide-screen TV or a 4:3 standard TV with a wide-screen mode
• 16:9 (page 81)

◆ If you have a 4:3 standard TV
• 4:3 LETTER BOX or 4:3 PAN SCAN (page 81)

8 Press ENTER.

The Setup Display for selecting the type of jack used to connect your amplifier (receiver) appears.



9 Press ↑/↓ to select the type of jack (if any) you are using to connect to an amplifier (receiver), then press ENTER.

Choose the item that matches the audio connection you selected on pages 24 to 27 (A through D).

A
• If you connect just a TV and nothing else, select "NO." Quick Setup is finished and connections are complete.

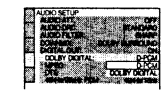
B1 C1
• Select "LINE OUTPUT L/R (AUDIO)." Quick Setup is finished and connections are complete.

B2 C2 D2
• Select "DIGITAL OUTPUT." The Setup Display for "DOLBY DIGITAL" appears.

D1 or both **B1** and **B2**
• Select "DIGITAL & 5.1CH OUTPUT." The Setup Display for "DOLBY DIGITAL" appears.

10 Press ↑/↓ to select the type of Dolby Digital signal you wish to send to your amplifier (receiver).

Choose the signal that matches the audio connection you selected on pages 25 to 27 (A through D).

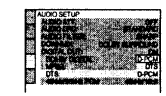


B2 C2
• D-PCM (page 84)

D2
• DOLBY DIGITAL (only if the amplifier (receiver) has a Dolby Digital decoder) (page 84)

11 Press ENTER.

"DTS" is selected.



12 Press ↑/↓ to select whether or not you wish to send a DTS signal to your amplifier (receiver).

Choose the item that matches the audio connection you selected on pages 25 to 27 (B through D).

D2 C2
• D-PCM (page 85)

D2
• DTS (only if the amplifier (receiver) has a DTS decoder) (page 85)

13 Press ENTER.

◆ When "DIGITAL OUTPUT" is selected in step 9
• Quick Setup is finished and connections are complete.
• If your AV amplifier (receiver) has an MPEG audio decoder, set "MPEG" to "MPEG" (page 85).

◆ When "DIGITAL & 5.1CH OUTPUT" is selected in step 9
• The Setup Display for "SPEAKER SETUP" appears.

14 Press ↑/↓ to select the size of the centre speaker.

If no centre speaker is connected, select "NONE" (page 85).

15 Press ENTER.

"REAR" is selected.

16 Press ↑/↓ to select the size of the rear speakers.

If no rear speaker is connected, select "NONE."

17 Press ENTER.

"SUBWOOFER" is selected.

18 Press ↑/↓ to select whether or not you have connected a subwoofer.

19 Press ENTER.

Quick Setup is finished. All connections and setup operations are complete.
If your AV amplifier (receiver) has an MPEG audio decoder, set "MPEG" to "MPEG" (page 85).

→continued

Enjoying the surround sound effects

To enjoy the surround sound effects of this player or your amplifier (receiver), set the following items as described below for the audio connection you selected on pages 25 to 27 (B through D). Each of these is the default setting and does not need to be adjusted when you first connect the player. See page 79 for using the Setup Display.

Audio Connection (pages 25 to 27)

A
• No additional settings are needed.

B1 C1
• Set "DOWNMIX" to "DOLBY SURROUND" (page 84).

D2 B2 C2
• Set "DOWNMIX" to "DOLBY SURROUND" (page 84).
• Set "DIGITAL OUT" to "ON" (page 84).

D1
• Set "DISTANCE," "LEVEL (FRONT)," and "LEVEL (REAR)" according to the connected speakers (page 86).

Hints

- **For connections D2 C2 B2**
  Set "48kHz/96kHz PCM" to "96kHz/24bit," only if you connect an amplifier (receiver) that conforms to the 96 kHz sampling frequency (page 85).
- **For connections B1 C1 D1**
  If the sound distorts even when the volume is turned down, set "AUDIO ATT" to "ON" (page 83).

Playing Discs

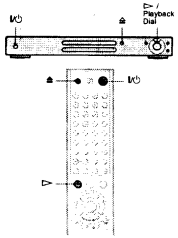
Playing Discs DVD-V

DVD-RW VCD SA-CD CD DATA CD DATA DVD

Depending on the DVD or VIDEO CD, some operations may be different or restricted. Refer to the operating instructions supplied with your disc.

DVP-NS780V

DVP-LS785V



1 Turn on your TV.

2 Press I/⏻.

The player turns on.

3 Switch the input selector on your TV so that the signal from the player appears on the TV screen.

◆ When using an amplifier (receiver)
Turn on the amplifier (receiver) and select the appropriate channel so that you can hear sound from the player.

4 Press ⏏ on the player, and place a disc on the disc tray.

Playback side facing down

5 Press ▷.

The disc tray closes. The player starts playback (continuous play). Adjust the volume on the TV or the amplifier (receiver).
Depending on the disc, a menu may appear on the TV screen. For DVD VIDEOs, see page 36. For VIDEO CDs, see page 39.

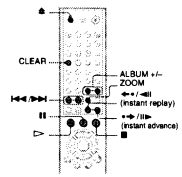
To turn off the player
Press I/⏻. The player enters standby mode.

Hint
The player turns off automatically whenever you leave it in stop mode for more than 30 minutes. (Auto Power Off function)

Note
Super Audio CD audio signals are not output from the DIGITAL OUT jacks.

→continued

Additional operations



To	Operation
Stop	Press ■
Pause	Press II
Resume play after pause	Press II or ▷
Go to the next chapter, track, or scene in continuous play mode	Press ⏭ on the remote, or briefly turn the ▷/Playback Dial*5 (DVP-LS785V only) on the player clockwise
Go back to the previous chapter, track, or scene in continuous play mode	Press ⏮ on the remote, or briefly turn the ▷/Playback Dial*5 (DVP-LS785V only) on the player counterclockwise
Stop play and remove the disc	Press ⏏
Replay the previous scene*1	Press ⏮/◁II (instant replay) during playback
Briefly fast forward the current scene*2	Press II▷/⏭ (instant advance) during playback
Magnify the image*3	Press ZOOM repeatedly. Press CLEAR to cancel.
Go to the next or previous album.*4	Press ALBUM + or – during playback

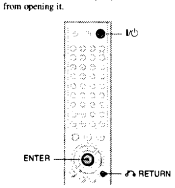
*1 DVD VIDEOs/DVD-RWs/DVD-Rs only. The button can be used except for DivX video files.
*2 DVD VIDEOs/DVD-RWs/DVD-Rs/DVD+RWs only. The button can be used except for DivX video files.
*3 Video and JPEG pictures only (except BACKGROUND pictures). You can move the enlarged picture using ←/↑/↓/→. Depending upon the contents of the disc, the zoom function may be cancelled automatically when the picture is moved.
*4 DATA CDs/DATA DVDs only
*5 For more details about the ▷/Playback Dial, see page 45.

Hints
- The Instant Replay function is useful when you want to review a scene or dialogue that you missed.
- The Instant Advance function is useful when you want to pass over a scene that you don't want to watch.

Note
You may not be able to use the Instant Replay or Instant Advance function with some scenes.

Locking the disc tray (Child Lock)

You can lock the disc tray to prevent children from opening it.



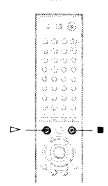
When the player is in standby mode, press ↶ RETURN, ENTER, and then I/⏻ on the remote.
The player turns on and "LOCKED" appears on the front panel display. The ⏏ and ⏏ buttons on the player or the remote do not work while the Child Lock is set.

To unlock the disc tray
When the player is in standby mode, press ↶ RETURN, ENTER, and then I/⏻ again.

Note
Even if you select "RESET" under "SETUP" in the Control Menu (page 80), the disc tray remains locked.

Resuming Playback From the Point Where You Stopped the Disc (Multi-disc Resume) DVD-V VCD

The player stores the point where you stopped the disc for up to 40 discs and resumes playback the next time you insert the same disc. If you store a resume playback point for the 41st disc, the resume playback point for the first disc is deleted.



1 While playing a disc, press ■ to stop playback.

"RESUME" appears on the front panel display.

2 Press ▷.

The player starts playback from the point where you stopped the disc in step 1.

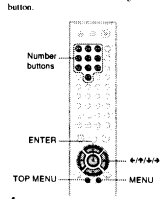
Hint
To play from the beginning of the disc, press ■ twice, then press ▷.

→continued

Notes
- "MULTI-DISC RESUME" in "CUSTOM SETUP" must be set to "ON" (default) for this function to work (page 83).
- The point where you stopped playing is cleared when:
  – you change the play mode.
  – you change the settings on the Setup Display.
- For DVD-RWs in VR mode, CDs, Super Audio CDs, DATA CDs, and DATA DVDs, the player remembers the resume playback point for the current disc.
  The resume point is cleared when:
  – you opened the disc tray.
  – you disconnect the mains lead.
  – the player enters standby mode (DATA CD/DATA DVD only).
- Resume Play does not work during Shuffle Play and Programme Play.
- This function may not work with some discs.
- If "MULTI-DISC RESUME" in "CUSTOM SETUP" is set to "ON" and you playback a recorded disc such as DVD-RW, the player may playback other recorded discs from the same resume point. To play from the beginning, press ■ twice and then press ▷.

Using the DVD's Menu DVD-V

A DVD is divided into long sections of a picture or a music feature called "titles." When you play a DVD which contains several titles, you can select the title you want using the TOP MENU button.
When you play DVDs that allow you to select items such as language for the sound and subtitles, select these items using the MENU button.

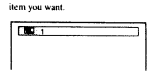


1 Press TOP MENU or MENU.

The disc's menu appears on the TV screen.
The contents of the menu vary from disc to disc.

2 Press ↑/↓/←/→ or the number buttons to select the item you want to play or change.

If you press the number buttons, the following display appears.
Press the number buttons to select the item you want.



3 Press ENTER.

Hint
To play without using PBC, press ⏮/⏭ or the number buttons while the player is stopped to select a track, then press ▷ or ENTER.
"Play without PBC" appears on the TV screen and the player starts continuous play. You cannot play still pictures such as a menu.
To return to PBC playback, press ■ twice then press ▷.

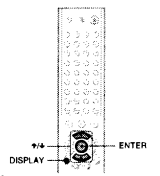
Playing Discs

3 Press ↑/↓ to select a setting.
- PLAY LIST: plays the titles created from "ORIGINAL" for editing.
- ORIGINAL: plays the titles originally recorded.

4 Press ENTER.

Selecting "ORIGINAL" or "PLAY LIST" on a DVD-RW DVD-RW

Some DVD RWs in VR (Video Recording) mode have two types of titles for playback: originally recorded titles (ORIGINAL) and titles that can be created on recordable DVD players for editing (PLAY LIST). You can select the type of title to be played.

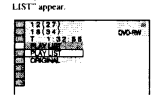


1 Press DISPLAY when the player is in stop mode.

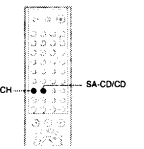
The Control Menu appears.

2 Press ↑/↓ to select [redacted] (ORIGINAL/PLAY LIST), then press ENTER.

The options for "ORIGINAL/PLAY LIST" appear.



Selecting a Playback Area for a Super Audio CD SA-CD

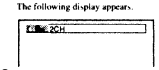


Selecting a playback area on a 2 channel + Multi-channel Super Audio CD

Some Super Audio CDs consist of a 2 channel playback area and a multi-channel playback area. You can select the playback area you want to listen to.

1 Press SA-CD MULTI/2CH in stop mode.

The following display appears.



2 Press SA-CD MULTI/2CH repeatedly to select the item.
- MULTI: plays a multi-channel playback area.
- 2CH: plays a 2 channel playback area.

The "MULTI" indicator in the front panel display lights up when playing a multi-channel playback area.

Selecting a playback layer when playing a hybrid Super Audio CD

Some Super Audio CDs consist of an HD layer and a CD layer. You can select the playback layer you want to listen to.

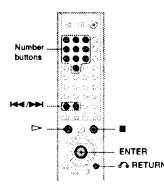
Press SA-CD/CD when the player is in stop mode.

Each time you press the button, an HD layer or a CD layer is alternately selected. When playing a CD layer, the "CD" indicator in the front panel display lights up.

Notes
- For details about Super Audio CD discs, see page 92.
- Each play mode function works only within the selected layer or playback area.

Playing VIDEO CDs With PBC Functions (PBC Playback) VCD

PBC (Playback Control) allows you to play VIDEO CDs interactively by following the menu on the TV screen.



1 Start playing a VIDEO CD with PBC functions.

The menu for your selection appears.

2 Press the number buttons to select the item number you want.

3 Press ENTER.

4 Follow the instructions in the menu for interactive operations.

Refer to the instructions supplied with the disc, as the operating procedure may differ depending on the VIDEO CD.

To return to the menu
Press ↶ RETURN.

Note
Depending on the VIDEO CD, "Press ENTER" in step 3 may appear as "Press SELECT" in the instructions supplied with the disc. In this case, press ▷.

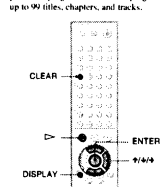
Various Play Mode Functions (Programme Play, Shuffle Play, Repeat Play, A-B Repeat Play)

You can set the following play modes:
- Programme Play (page 40)
- Shuffle Play (page 41)
- Repeat Play (page 42)
- A-B Repeat Play (page 43)

Note
The play mode is cancelled when:
– you open the disc tray.
– the player enters standby mode by pressing I/⏻.

Creating your own programme (Programme Play) DVD-V VCD SA-CD CD

You can play the contents of a disc in the order you want by arranging the order of the titles, chapters, or tracks on the disc to create your own programme. You can programme up to 99 titles, chapters, and tracks.

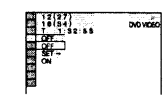


1 Press DISPLAY.

The Control Menu appears.

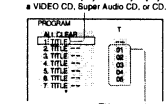
2 Press ↑/↓ to select [redacted] (PROGRAM), then press ENTER.

The options for "PROGRAM" appear.



3 Press ↑/↓ to select "SET →," then press ENTER.

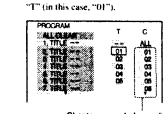
"TRACK" is displayed when you play a VIDEO CD, Super Audio CD, or CD.



Titles or tracks recorded on a disc

4 Press →.

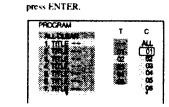
The cursor moves to the title or track row "T" (in this case, "01").



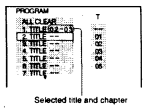
Chapters recorded on a disc

5 Select the title, chapter, or track you want to programme.

◆ When playing a DVD VIDEO
For example, select chapter "03" of title "02."
Press ↑/↓ to select "02" under "T," then press ENTER.



Next, press ↑/↓ to select "03" under "C," then press ENTER.



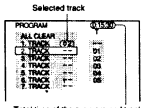
Selected title and chapter

◆ **When playing a VIDEO CD, Super Audio CD, or CD**

For example, select track "02."

Press ↑/↓ to select "02" under "T," then press ENTER. The track number may be displayed in 3 digits for a Super Audio CD.

Selected track



Total time of the programmed tracks

6 To programme other titles, chapters, or tracks, repeat steps 4 to 5.

The programmed titles, chapters, and tracks are displayed in the selected order.

7 Press ▷ to start Programme Play.

Programme Play begins.

When the programme ends, you can restart the same programme again by pressing ▷.

To return to normal play

Press CLEAR, or select "OFF" after step 2. To play the same programme again, select "ON" in step 3 and press ENTER.

To change or cancel a programme

1 Follow steps 1 to 3 of "Creating your own programme (Programme Play)."

2 Select the programme number of the title, chapter, or track you want to change or cancel using ↑/↓ and press →. If you want to delete the title, chapter, or track from the programme, press CLEAR.

3 Follow step 5 for new programming. To cancel a programme, select "-" under "T," then press ENTER.

To cancel all of the titles, chapters, or tracks in the programmed order

1 Follow steps 1 to 3 of "Creating your own programme (Programme Play)."

2 Press ↑ and select "ALL CLEAR."

3 Press ENTER.

Hint

You can perform Repeat Play or Shuffle Play of programmed titles, chapters, or tracks. During Programme Play, follow the steps of Repeat Play (page 42) or Shuffle Play (page 41).

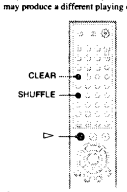
Notes

- When you programme tracks on a Super VCD, the total playing time is not displayed.
- You cannot use this function with VIDEO CDs and Super VCDs with PBC playback.

Playing in random order (Shuffle Play)

DVD V | VCD | SA-CD | CD

You can have the player "shuffle" titles, chapters, or tracks. Subsequent "shuffling" may produce a different playing order.



1 Press SHUFFLE during playback.

The following display appears.

→continued

2 Press SHUFFLE repeatedly to select the item to be shuffled.

◆ **When playing a DVD VIDEO**
- TITLE
- CHAPTER

◆ **When playing a VIDEO CD, Super Audio CD, or CD**
- TRACK

◆ **When Programme Play is activated**
- ON: shuffles titles, chapters, or tracks selected in Programme Play.

To return to normal play

Press CLEAR, or select "OFF" in step 2.

Hints

- You can set Shuffle Play while the player is stopped. After selecting the "SHUFFLE" option, press ▷. Shuffle Play starts.
- Up to 200 chapters in a disc can be played in random order when "CHAPTER" is selected.

Note

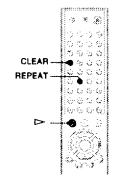
You cannot use this function with VIDEO CDs and Super VCDs with PBC playback.

Playing repeatedly (Repeat Play)

DVD V | DVD RW | VCD | SA-CD | CD | DATA CD | DATA DVD

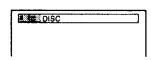
You can play all of the titles or tracks on a disc, or a single title, chapter, or track repeatedly.

You can use a combination of Shuffle or Programme Play modes.



1 Press REPEAT during playback.

The following display appears.



2 Press REPEAT repeatedly to select the item to be repeated.

◆ **When playing a DVD VIDEO**
- DISC: repeats all of the titles.
- TITLE: repeats the current title on a disc.
- CHAPTER: repeats the current chapter.

◆ **When playing a DVD-RW**
- DISC: repeats all the titles of the selected type.
- TITLE: repeats the current title on a disc.
- CHAPTER: repeats the current chapter.

◆ **When playing a VIDEO CD, Super Audio CD, or CD**
- DISC: repeats all of the tracks.
- TRACK: repeats the current track.

◆ **When playing a DATA CD/DATA DVD**
- DISC: repeats all of the albums.
- ALBUM: repeats the current album.
- TRACK (MP3 audio tracks only): repeats the current track.
- FILE (DivX video files only): repeats the current file.

◆ **When Programme Play or Shuffle Play is activated**
- ON: repeats Programme Play or Shuffle Play.

To return to normal play

Press CLEAR, or select "OFF" in step 2.

Hint

You can set Repeat Play while the player is stopped. After selecting the "REPEAT" option, press ▷. Repeat Play starts.

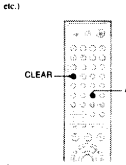
Notes

- You cannot use this function with VIDEO CDs and Super VCDs with PBC playback.
- When repeating a DATA CD which contains MP3 audio tracks and JPEG image files, and their playing times are not the same, the sound will not match the image.
- When "MODE (MP3, JPEG)" is set to "IMAGE (JPEG)" (page 67), you cannot select "TRACK."

Repeating a specific portion (A-B Repeat Play)

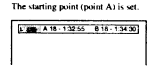
DVD V | DVD RW | VCD | CD

You can play a specific portion of a title, chapter or track repeatedly. (This function is useful when you want to memorize lyrics, etc.)



1 During playback, when you find the starting point (point A) of the portion to be played repeatedly, press A-B.

The starting point (point A) is set.



2 When you reach the ending point (point B), press A-B again.

The set points are displayed and the player starts repeating this specific portion.

To return to normal play

Press CLEAR.

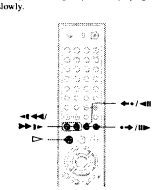
Notes

- When you set A-B Repeat Play, the settings for Shuffle Play, Repeat Play, and Programme Play are cancelled.
- A-B Repeat Play does not work across multiple titles.
- You cannot set A-B Repeat Play for contents on a DVD-RW (VR mode) that contain still pictures.

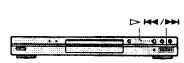
Searching for a Scene

Searching for a Particular Point on a Disc (Search, Scan, Slow-motion Play, Freeze Frame)

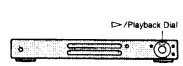
You can quickly locate a particular point on a disc by monitoring the picture or playing back slowly.



DVP-NS780V



DVP-LS785V



Notes

- Depending on the disc, you may not be able to do some of the operations described.
- For DATA CDs, you can search for a particular point only on an MP3 audio track.

Locating a point quickly using the previous/next buttons

DVD V | DVD RW | VCD | SA-CD | CD | DATA CD | DATA DVD

You can search for the next or previous chapter, track, or scene using ⏮/⏭ on the player.

During playback, press ⏭ or ⏮ once briefly to go to the next or previous chapter/track/scene. Or, press and hold ⏭ or ⏮ to search forward or backwards, and release the button when you find the point you want to return to normal playback. (Search)

For DVP-LS785V, see page 45.

Locating a point quickly by playing a disc in fast forward or fast reverse (Scan)

DVD V | DVD RW | VCD | SA-CD | CD | DATA CD | DATA DVD

Press ■/◄◄ or ►►/► while playing a disc. When you find the point you want, press ▷ to return to normal speed. Each time you press ■/◄◄ or ►►/► during scan, the scan speed changes. With each press the indication changes as shown below. Actual speeds may differ between discs.

Playback direction

Opposite direction

The "►►2"/"►2" playback speed is about twice the normal speed.

The "►►3"/"3◄◄" playback speed is faster than "►►2"/"2◄◄" and the "►►2"/"2◄◄" playback speed is faster than "►►1"/"1◄◄."

Watching frame by frame (Slow-motion Play)

DVD V | DVD RW | VCD | DATA CD | DATA DVD

Press ■/◄◄ or ►►/► when the player is in pause mode. To return to normal speed, press ▷.

Each time you press ■/◄◄ or ►►/► during Slow-motion Play, the playback speed changes. Two speeds are available. With each press the indication changes as follows:

Playback direction

►►2 ⟷ ►►1

Opposite direction (DVD VIDEO/DVD-RW only)

◄◄2 ⟷ ◄◄1

The "►►2"/"►►1" playback speed is slower than "►►1"/"◄◄1."

Note

For DATA CDs, this function works only for DivX video files.

Playing one frame at a time (Freeze Frame)

DVD V | DVD RW | VCD | DATA CD | DATA DVD

When the player is in the pause mode, press ◄◄/►► (step) to go to the next frame. Press ◄◄/►► (step) to go to the preceding frame (DVD VIDEO/DVD-RW only). To return to normal playback, press ▷.

Notes

- You cannot search for a still picture on a DVD-RW in VR mode.
- For DATA CDs, this function works only for DivX video files.

Using the Playback Dial on the player (DVP-LS785V only)

DVD V | DVD RW | VCD | SA-CD | CD | DATA CD | DATA DVD

You can search for a particular point on a disc in various ways using the Playback Dial.

To go to the next chapter/track/scene

During playback, briefly turn the Playback Dial clockwise to go to the next chapter/track/scene, or counterclockwise to go to the previous ones.

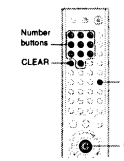
To locate a point quickly (Search)

During playback, turn and hold the Playback Dial clockwise to locate a point in the playback direction, or counterclockwise to locate a point in the opposite direction. When you find the point you want, release the dial to return to normal playback speed.

Searching for a Title/ Chapter/Track/Scene, etc. (Search mode)

DVD V | DVD RW | VCD | SA-CD | CD | DATA CD | DATA DVD

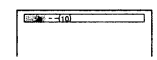
You can search a DVD by title or chapter, and you can search a VIDEO CD/Super Audio CD/CD/DATA CD/DATA DVD by track, index, or scene. As titles and tracks are assigned unique numbers on the disc, you can select the desired one by entering its number. You can also search for a scene using the time code.



1 Press SEARCH MODE.

The following display appears.

"- -:- - (⇔)" appears next to the icon (⇔ refers to a number). The number in parentheses indicates the total number of titles, tracks, indexes, scenes, etc., of the disc.



2 Press SEARCH MODE repeatedly to select a search method.

◆ **When playing a DVD VIDEO/DVD-RW**
- TITLE
- CHAPTER
- TIME/TEXT

Select "TIME/TEXT" to search for a starting point by inputting the time code.

◆ **When playing a VIDEO CD or Super VCD without PBC playback**
- TRACK
- INDEX

◆ **When playing a VIDEO CD or Super VCD with PBC Playback**
- SCENE

◆ **When playing a Super Audio CD/CD**
- TRACK

◆ **When playing a DATA CD/DATA DVD**
- ALBUM
- TRACK (MP3 audio tracks only)
- FILE (JPEG image files, and DivX video files only)

3 Select the number of the title, track, scene, time code, etc. you want by pressing the number buttons to select the digit.

◆ **When you select TIME/TEXT**

For example, to find the scene at 2 hours, 10 minutes, and 20 seconds after the beginning, enter "21020."

◆ **If you make a mistake**

Cancel the number by pressing CLEAR, then select another number.

4 Press ENTER.

The player starts playback from the selected number.

To turn off the display

Press SEARCH MODE repeatedly until the display is turned off.

Hints

- When the Control Menu display is turned off, you can search for a chapter (DVD VIDEO/DVD-RW), track (Super Audio CD/CD), or file (DATA CD (DivX video)/DATA DVD) by pressing the number buttons and ENTER.
- You can display the first scene of titles, chapters, or tracks recorded on the disc on a screen divided into 9 sections. You can start playback directly by selecting one of the scenes. For details, see "Searching by Scene (PICTURE NAVIGATION)" (page 47).

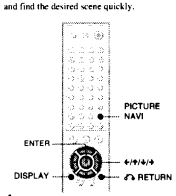
Notes

- The title, chapter, or track number displayed is the same number recorded on the disc.
- You cannot search for a scene on a DVD+RW using the time code.

Searching by Scene (PICTURE NAVIGATION)

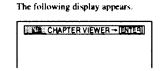
DVD V | VCD

You can divide the screen into 9 subscreens and find the desired scene quickly.



1 Press PICTURE NAVI during playback.

The following display appears.

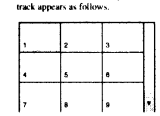


2 Press PICTURE NAVI repeatedly to select an item.
- CHAPTER VIEWER (DVD VIDEO only): displays the first scene of each chapter.
- TITLE VIEWER (DVD VIDEO only): displays the first scene of each title.
- TRACK VIEWER (VIDEO CD/ Super VCD only): displays the first scene of each track.

→continued

3 Press ENTER.

The first scene of each chapter, title, or track appears as follows.



4 Press ←/↑/↓/→ to select a chapter, title, or track, and press ENTER.

Playback starts from the selected scene.

To return to normal play during setting

Press ↩ RETURN or DISPLAY.

Hint

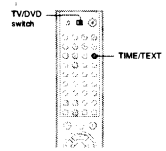
If there are more than 9 chapters, titles, or tracks, ▼ is displayed at the bottom right of the screen. To display the additional chapters, titles, or tracks, select the bottom scenes and press ↓. To return to the previous scene, select the top scenes and press ↑.

Note

Depending on the disc, you may not be able to select some items.

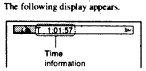
Checking the Playing Time and Remaining Time DVD-V DVD-RW VCD SR-CD CD DATA CD DATA DVD

You can check the playing time and remaining time of the current title, chapter, or track. Also, you can check the DVD/Super Audio CD/CD text, track name (MP3 audio), or file name (DivX video) recorded on the disc.



1 Make sure that the TV/DVD switch is set to DVD. Press TIME/TEXT during playback.

The following display appears.



2 Press TIME/TEXT repeatedly to change the time information.

The available time information depends upon the type of disc you are playing.

→continued

◆ When playing a DVD VIDEO or DVD-RW

- T ●:●:● (hours: minutes: seconds)
  Playing time of the current title
- T-●:●:●
  Remaining time of the current title
- C ●:●:●
  Playing time of the current chapter
- C-●:●:●
  Remaining time of the current chapter

◆ When playing a VIDEO CD or Super VCD (with PBC functions)

- ●:● (minutes: seconds)
  Playing time of the current scene

◆ When playing a VIDEO CD (without PBC functions), Super Audio CD, or CD

- T ●:● (minutes: seconds)
  Playing time of the current track
- T-●:●
  Remaining time of the current track
- D ●:●
  Playing time of the current disc
- D-●:●
  Remaining time of the current disc

◆ When playing a Super VCD (without PBC functions)

- T ●:● (minutes: seconds)
  Playing time of the current track

◆ When playing a DATA CD (MP3 audio)

- T ●:● (minutes: seconds)
  Playing time of the current track

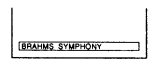
◆ When playing a DATA CD (DivX video)/ DATA DVD (DivX video)

- ●:●:● (hours: minutes: seconds)
  Playing time of the current file

Checking the play information of the Disc

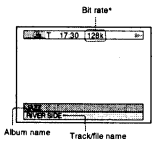
To check the DVD/Super Audio CD/CD text

Press TIME/TEXT repeatedly in step 2 to display text recorded on the DVD/Super Audio CD/CD.
The DVD/Super Audio CD/CD text appears only when text is recorded in the disc. You cannot change the text. If the disc does not contain text, "NO TEXT" appears.



To check DATA CD/DATA DVD album name, etc.

By pressing TIME/TEXT while playing MP3 audio tracks on a DATA CD or DivX video files on a DATA CD/DATA DVD, you can display the name of the album/track/file, and the audio bit rate (the amount of data per second of the current audio) on your TV screen.

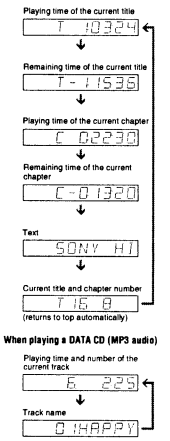


* Appears when:
– playing an MP3 audio track on DATA CDs.
– playing a DivX video file that contains MP3 audio signals on DATA CDs/DATA DVDs.

Checking the information on the front panel display

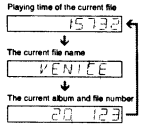
You can view the time information and text displayed on the TV screen also on the front panel display. The information on the front panel display changes as follows when you change the time information on your TV screen.

When playing a DVD VIDEO or DVD-RW

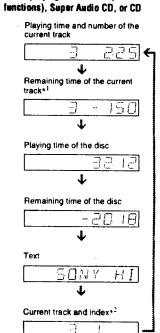

Playing time of the current title
Remaining time of the current title
Playing time of the current chapter
Remaining time of the current chapter
Text
Current title and chapter number
(returns to top automatically)

When playing a DATA CD (MP3 audio)

When playing a DATA CD (DivX video), or DATA DVD (DivX video)



When playing a VIDEO CD (without PBC functions), Super Audio CD, or CD


Playing time and number of the current track
Remaining time of the current track*1
Playing time of the disc
Remaining time of the disc
Text
Current track and index*2
(returns to top automatically)

*1 When playing a Super Audio CD, the current track is not displayed.
*2 The current track and index appear only when playing a VIDEO CD or Super Audio CD.

Hints

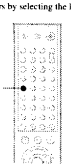
- When playing VIDEO CDs with PBC functions, the scene number or the playing time are displayed.
- Long text that does not fit in a single line will scroll across the front panel display.
- You can also check the time information and text using the Control Menu (page 14).

Notes

- Depending on the type of disc being played, the disc text or track name may not be displayed.
- The player can only display the first level of the disc text, such as the disc name or title.
- Playing time of MP3 audio tracks and DivX video files may not be displayed correctly.
- If you play a disc containing JPEG image files only, "NO AUDIO DATA" appears when "MODE (MP3, JPEG)" is set to "AUTO." "JPEG" appears when "MODE (MP3, JPEG)" is set to "IMAGE (JPEG)" in the front panel display.

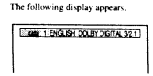
Changing the Sound DVD-V DVD-RW VCD CD DATA CD DATA DVD

When playing a DVD VIDEO or DATA DVD/DATA CD (DivX video files) recorded in multiple audio formats (PCM, Dolby Digital, MPEG audio, or DTS), you can change the audio format. If the DVD VIDEO is recorded with multilingual tracks, you can also change the language.
With CDs, DATA CDs, or VIDEO CDs, you can select the sound from either the right or left channel and listen to the sound of the selected channel through both the right and left speakers. For example, when playing a disc containing a song with the vocals on the right channel and the instruments on the left channel, you can hear the instruments from both speakers by selecting the left channel.



1 Press AUDIO during playback.

The following display appears.



2 Press AUDIO repeatedly to select the desired audio signal.

◆ When playing a DVD VIDEO

Depending on the DVD VIDEO, the choice of language varies.
When 4 digits are displayed, they indicate a language code. See "Language Code List" on page 96 to see which language the code represents. When the same language is displayed two or more times, the DVD VIDEO is recorded in multiple audio formats.

◆ When playing a DVD-RW

The types of sound tracks recorded on a disc are displayed. The default setting is underlined.
Example:

- 1: MAIN (main sound)
- 1: SUB (sub sound)
- 1: MAIN+SUB (main and sub sound)

◆ When playing a VIDEO CD, CD, or DATA CD (MP3 audio)

The default setting is underlined.

- STEREO: the standard stereo sound
- 1/L: the sound of the left channel (monaural)
- 2/R: the sound of the right channel (monaural)

◆ When playing a DATA CD (DivX video), or DATA DVD (DivX video)

The choice of DATA CD or DATA DVD audio signal formats differ, depending on the DivX video file contained on the disc. The format is shown in the display.

◆ When playing a Super VCD

The default setting is underlined.

- 1: STEREO: the stereo sound of the audio track 1
- 1:1/L: the sound of the left channel of the audio track 1 (monaural)
- 1:2/R: the sound of the right channel of the audio track 1 (monaural)
- 2:STEREO: the stereo sound of the audio track 2
- 2:1/L: the sound of the left channel of the audio track 2 (monaural)
- 2:2/R: the sound of the right channel of the audio track 2 (monaural)

Notes

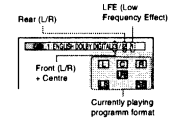
- While playing a Super VCD on which the audio track 2 is not recorded, no sound will come out when you select "2:STEREO," "2:1/L," or "2:2/R."
- You cannot change the sound for Super Audio CDs.

Checking the audio signal format DVD-V DATA CD DATA DVD

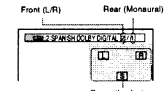
You can check the audio signal format by pressing AUDIO repeatedly during playback. The format of the current audio signal (Dolby Digital, DTS, PCM, etc.) appears as shown below.

◆ When playing a DVD VIDEO

Example:
Dolby Digital 5.1 ch

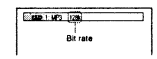


Example:
Dolby Digital 3 ch



◆ When playing a DivX video file on a DATA CD or a DATA DVD

Example:
MP3 audio



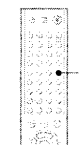
About audio signals

Audio signals recorded in a disc contain the sound elements (channels) shown below. Each channel is output from a separate speaker.

- Front (L)
- Front (R)
- Centre
- Rear (L)
- Rear (R)
- Rear (Monaural): This signal can be either the Dolby Surround Sound processed signals or the Dolby Digital sound's monaural rear audio signals.
- LFE (Low Frequency Effect) signal

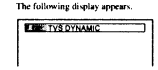
Surround Mode Settings DVD-V DVD-RW VCD CD DATA CD DATA DVD

You can enjoy surround sounds while playing discs including Dolby Digital, DTS, and MPEG audio DVDs, even if you have only 2 or 4 speakers. Select the surround mode that best suits your speaker setup.



1 Press SUR during playback.

The following display appears.



2 Press SUR repeatedly to select one of the surround modes.

See the explanations given for each item in the following section.

◆ For 2 speaker setups

- TVS DYNAMIC
- TVS WIDE
- TVS NIGHT
- TVS STANDARD

◆ For 4 to 6 speaker setups

(If you select "NONE" in the setting of "REAR" in "SPEAKER SETUP" (page 85), you cannot select these modes.)

- NORMAL SURROUND
- ENHANCED SURROUND
- VIRTUAL REAR SHIFT
- VIRTUAL MULTI REAR
- VIRTUAL MULTI DIMENSION

To cancel the setting

Select "OFF" in step 2.

For 2 speaker setups

When you connect a stereo TV or 2 front speakers, TVS (TV Virtual Surround) lets you enjoy surround sound effects by using sound imaging to create virtual rear speakers from the sound of the front speakers (L: left, R: right) without using actual rear speakers. TVS was developed by Sony to produce surround sound for home use using just a stereo TV.
If the player is set up to output the signal from the DIGITAL OUT (OPTICAL or COAXIAL) jack, the surround effect will be heard only when "DOLBY DIGITAL" and "DTS" are set to "D-PCM" and "MPEG" is set to "PCM" in "AUDIO SETUP"(page 83).

◆TVS DYNAMIC

Creates one set of virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers (shown below). This mode is effective when the distance between the front L and R speakers is short, such as with built-in speakers on a stereo TV.

◆TVS WIDE

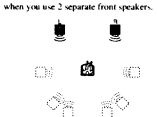
Creates five sets of virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers (shown below). This mode is effective when the distance between the front L and R speakers is short, such as with built in speakers on a stereo TV.

◆TVS NIGHT

Large sounds, such as explosions, are suppressed, but quieter sounds are unaffected. This feature is useful when you want to hear the dialogue and enjoy the surround sound effects of "TVS WIDE" at low volume.

◆TVS STANDARD

Creates three sets of virtual rear speakers from the sound of the actual front speakers (L, R) as shown below. This mode is effective when you use 2 separate front speakers.



L: Front speaker (left)
R: Front speaker (right)
: Virtual speaker

For 4 to 6 speaker setups

You can enjoy the following surround effects by using the 2 front speakers and 2 rear speakers.
Connect the player to the amplifier (receiver) with the 6ch connection (page 27).
You can experience Dolby Surround (Pro Logic) sounds or Digital Cinema Sound (DCS). DCS uses sound imaging to shift the sound of the rear speakers away from the actual speaker position or create entire sets of virtual rear speakers from one set of actual rear speakers. "VIRTUAL REAR SHIFT," "VIRTUAL MULTI REAR," and "VIRTUAL MULTI DIMENSION" make use of this technology.

◆NORMAL SURROUND

Software with 2 channel audio signals is decoded with the Dolby Surround (Pro Logic) decoder to create surround effects. The rear speakers will emit identical monaural sounds. If you are using a centre speaker, the appropriate sounds for the centre speaker will be delivered.

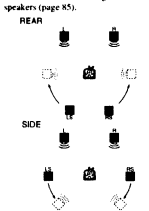
◆ENHANCED SURROUND

Provides a greater sense of presence from a Dolby Surround (Pro Logic) source with a monaural rear channel signal. Produces a stereo like effect in the rear channels.

→continued

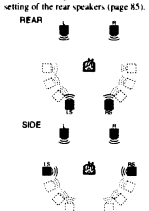
◆VIRTUAL REAR SHIFT

Shifts the sound of the rear speakers away from the actual speaker position.
The shift position differs according to "REAR" or "SIDE" setting of the rear speakers (page 85).



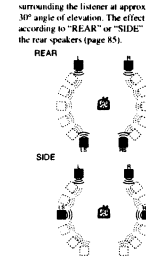
◆VIRTUAL MULTI REAR

Creates an array of virtual rear speakers from a single set of actual rear speakers.
The position of the virtual rear speakers differs according to "REAR" or "SIDE" setting of the rear speakers (page 85).



◆VIRTUAL MULTI DIMENSION

Creates an array of virtual rear speaker positions higher than the listener from a single set of actual rear speakers.
This mode creates five sets of virtual speakers surrounding the listener at approximately a 30° angle of elevation. The effect differs according to "REAR" or "SIDE" setting of the rear speakers (page 85).



L: Front speaker (left)
R: Front speaker (right)
LS: Rear speaker (left)
RS: Rear speaker (right)
: Virtual speaker

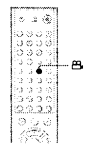
Notes

- When you select one of the surround modes, turn off the surround setting of the connected TV or amplifier (receiver).
- Not all discs will respond to the "TVS NIGHT" function in the same way.
- To enjoy the multichannel audio through the 5.1CH OUTPUT jacks, correctly set each speaker position and distance (page 27, 85).
- When the playing signal does not contain a signal for the rear speakers, you cannot hear the TVS effect.
- When you select one of the TVS modes, the player does not output the sound of centre speaker.
- Make sure that your listening position is between and at an equal distance from your speakers, and that the speakers are located in similar surroundings.
- If you use the DIGITAL OUT (OPTICAL or COAXIAL) jack and set "DOLBY DIGITAL" to "DOLBY DIGITAL," "DTS" to "DTS," and "MPEG" to "MPEG" in "AUDIO SETUP," sound will come from your speakers but it will not have the SURROUND effect.

Changing the Angles

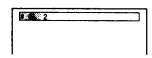
DVD-V

If various angles (multi angles) for a scene are recorded on the DVD VIDEO, "🎥" appears in the front panel display. This means that you can change the viewing angle.



1 Press 🎥 (angle) during playback.

The number of the angle appears on the display.



2 Press 🎥 (angle) repeatedly to select an angle number.

The scene changes to the selected angle.

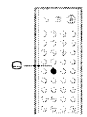
Note

Depending on the DVD VIDEO, you may not be able to change the angles even if multi-angles are recorded on the DVD VIDEO.

Displaying the Subtitles

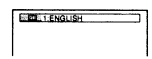
DVD-V DVD-RW DATA CD DATA DVD

If subtitles are recorded on the discs, you can change the subtitles or turn them on and off whenever you want while playing the disc.



1 Press 💬 (subtitle) during playback.

The following display appears.



2 Press 💬 (subtitle) repeatedly to select a setting.

◆ When playing a DVD VIDEO
Select the language.
Depending on the DVD VIDEO, the choice of language varies.
When 4 digits are displayed, they indicate a language code. See "Language Code List" on page 96 to see which language the code represents.

◆ When playing a DVD-RW
Select "ON."

◆ When playing a DATA CD (DivX video), or DATA DVD
The choices of DATA CD or DATA DVD subtitles differ, depending on the DivX video file contained on the disc. The choices are shown in the display.

To turn off the subtitles
Select "OFF" in step 2.

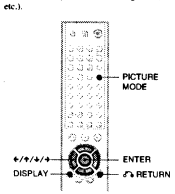
Notes

- Depending on the DVD VIDEO, you may not be able to change the subtitles even if multilingual subtitles are recorded on it. You also may not be able to turn them off.
- With DATA CDs, the subtitles can be changed for DivX video files only.
- You can change the subtitles if the DivX video file has an ".AVI" or ".DIVX" extension and contains subtitle information within the same file.

Adjusting the Playback Picture (CUSTOM PICTURE MODE)

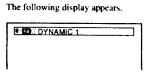
DVD-V DVD-RW VCD DATA CD DATA DVD

You can adjust the video signal of the DVD, VIDEO CD, DATA CD in JPEG format, or DATA CD/DATA DVD containing DivX video files from the player to obtain the picture quality you want. Choose the setting that best suits the programme you are watching. When you select "MEMORY," you can make further adjustments to each element of the picture (colour, brightness, etc.).



1 Press PICTURE MODE during playback.

The following display appears.



2 Press PICTURE MODE repeatedly to select the setting you want.

The default setting is underlined.
- STANDARD: displays a standard picture.

➡continued

- DYNAMIC 1: produces a bold dynamic picture by increasing the picture contrast and the colour intensity.
- DYNAMIC 2: produces a more dynamic picture than DYNAMIC 1 by further increasing the picture contrast and colour intensity.
- CINEMA 1: enhances details in dark areas by increasing the black level.
- CINEMA 2: white colours become brighter and black colours become richer, and the colour contrast is increased.
- MEMORY: adjusts the picture in greater detail.

Hint
When you watch a movie, "CINEMA 1" or "CINEMA 2" is recommended.

Adjusting the picture items in "MEMORY"

You can adjust each element of the picture individually.
- PICTURE: changes the contrast
- BRIGHTNESS: changes the overall brightness
- COLOR: makes the colours deeper or lighter
- HUE: changes the colour balance

1 Press PICTURE MODE repeatedly to select "MEMORY" and press ENTER.

The "PICTURE" adjustment bar appears.

2 Press +/→ to adjust the picture contrast.

To go the next or previous picture item without saving the current setting, press +/↓.

3 Press ENTER.

The adjustment is saved, and "BRIGHTNESS" adjustment bar appears.

4 Repeat step 2 and 3 to adjust "BRIGHTNESS," "COLOR," and "HUE."

To turn off the display
Press ↶ RETURN, or DISPLAY.

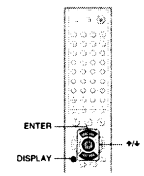
Note

The "BRIGHTNESS" setting is not effective if you connect the player via the LINE OUT (VIDEO) or S VIDEO OUT jack and select "PROGRESSIVE AUTO" or "PROGRESSIVE VIDEO" by using the PROGRESSIVE button on the front panel.

Sharpening the Pictures (SHARPNESS)

DVD-V DVD-RW VCD DATA CD DATA DVD

You can enhance the outlines of images to produce a sharper picture.



1 Press DISPLAY during playback.

The Control Menu appears.

2 Press +/↓ to select (SHARPNESS), then press ENTER.

The options for "SHARPNESS" appear.

3 Press +/↓ to select a level.

- 1: enhances the outline.
- 2: enhances the outline more than 1.

4 Press ENTER.

The selected setting takes effect.

To cancel the "SHARPNESS" setting
Select "OFF" in step 3.

Note

This setting is not effective if you connect the player via the LINE OUT (VIDEO) or S VIDEO OUT jack and select "PROGRESSIVE AUTO" or "PROGRESSIVE VIDEO" by using the PROGRESSIVE button on the front panel.

About MP3 Audio Tracks and JPEG Image Files

MP3 is audio compression technology that satisfies the ISO/MPEG regulations. JPEG is image compression technology.
You can play DATA CDs that contain MP3 audio tracks or JPEG image files.

DATA CDs that the player can play

You can play back DATA CDs (CD-ROM/CD-R/CD-RW) recorded in MP3 (MPEG1 Audio Layer 3) and JPEG format. However, the discs must be recorded according to ISO9660 Level 1, Level 2 or Joliet format for the player to recognize the tracks (or files).
You can also play discs recorded in Multi Session.
Refer to the instructions supplied with the CD-R/CD-RW drives and the recording software (not supplied) for details on the recording format.

Note on Multi Session discs
If MP3 audio tracks or JPEG image files are recorded in the first session, the player will also play MP3 audio tracks or JPEG image files in other sessions. If audio tracks and images in Music CD format or Video CD format are recorded in the first session, only the first session will be played back.

Note

The player may not be able to play some DATA CDs created in the Packet Write format.

MP3 audio track or JPEG image file that the player can play

The player can play the following tracks and files:
– MP3 audio tracks with the extension ".MP3."
– JPEG image files with the extension ".JPEG" or ".JPG."
– JPEG image files that conform to the DCF* image file format.
* "Design rule for Camera File system": Image standards for digital cameras regulated by JEITA (Japan Electronics and Information Technology Industries Association).

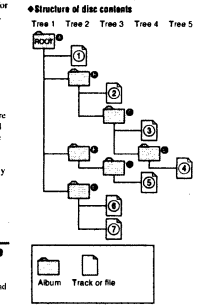
Notes

- The player will play any data with the extension ".MP3," ".JPG," or ".JPEG," even if they are not in MP3 or JPEG format. Playing these data may generate a loud noise which could damage your speaker system.
- The player does not conform to audio tracks in MP3PRO format.
- Some JPEG files cannot be played.
- You cannot play MP3 audio tracks/JPEG image files in DATA CDs that contain DivX video files.

About playback order of albums, tracks, and files

Albums play in the following order:

◆Structure of disc contents



When you insert a DATA CD and press ▷, the numbered tracks (or files) are played sequentially, from ① through ⑦. Any sub-albums/tracks (or files) contained within a currently selected album take priority over the next album in the same tree. (Example: ● contains ● so ⓒ is played before Ⓑ.)

When you press MENU and the list of album names appears (page 64), the album names are arranged in the following order:
Ⓐ → ● → ● → ● → ● Albums that do not contain tracks (or files) (such as album ●) do not appear in the list.

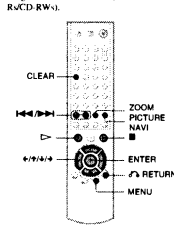
Hints
- If you add numbers (01, 02, 03, etc.) to the front of the track/file names when you store the tracks (or files) in a disc, the tracks and files will be played in that order.
- Since a disc with many trees takes longer to start playback, it is recommended that you create albums with no more than two trees.

Notes

- Depending on the software you use to create the DATA CD, the playback order may differ from the above illustration.
- The playback order above may not be applicable if there are more than 200 albums and 300 tracks/files in each album.
- The player can recognize up to 200 albums (the player will count just albums, including albums that do not contain MP3 audio tracks and JPEG image files). The player will not play any albums beyond the 200th album.
- Proceeding to the next or another album may take some time.

Playing MP3 Audio Tracks or JPEG Image Files DATA CD

You can play MP3 audio tracks and JPEG image files on DATA CDs (CD-ROM/CD-R/CD-RW's).



Hint
You can view the disc information while playing MP3 audio tracks and JPEG image files (page 49).

Notes

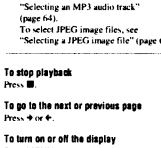
- DATA CDs recorded in KODAK Picture CD format automatically start playing when inserted.
- If no MP3 audio track or JPEG image file is recorded on the DATA CD, "No audio data" or "No image data" appears on the screen.

➡continued

Selecting an album

1 Press MENU.

The list of albums on the disc appears. When an album is being played, its title is shaded.



2 Press +/↓ to select the album you want to play.

3 Press ▷.

Playback starts from the selected album.
To select MP3 audio tracks, see "Selecting an MP3 audio track" (page 64).
To select JPEG image files, see "Selecting a JPEG image file" (page 65).

To stop playback
Press ■.

To go to the next or previous page
Press → or ←.

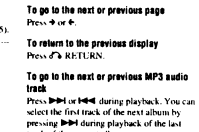
To turn on or off the display
Press MENU repeatedly.

Hints
- Of the selected album, you can select to play only the MP3 audio tracks, JPEG image files, or both, by setting "MODE (MP3, JPEG)" (page 67).
- During playback, you can go to the next or previous album without turning on the above album list by pressing ALBUM +/–.

Selecting an MP3 audio track

1 After step 2 of "Selecting an album," press ENTER.

The list of tracks in the album appears.



2 Press +/↓ to select a track, and press ENTER.

Playback starts from the selected track.

To stop playback
Press ■.

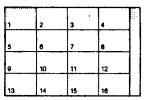
To go to the next or previous page
Press → or ←.

To return to the previous display
Press ↶ RETURN.

To go to the next or previous MP3 audio track
Press ▶▶| or |◀◀ during playback. You can select the first track of the next album by pressing ▶▶|, during playback of the last track of the current album.
Note that you cannot return to the previous album by using |◀◀, and that you need to select the previous album from the album list.

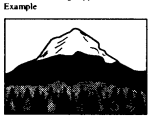
Selecting a JPEG image file

1 After step 2 of "Selecting an album," press PICTURE NAVI.
The image files in the album appear in 16 subscreens. A scroll box is displayed on the right.



To display the additional image, select the bottom images and press ↓. To return to the previous image, select the top images and press ↑.

2 Press ←/↑/↓/→ to select the image you want to view, and press ENTER.
The selected image appears.
Example

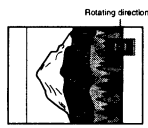


To go to the next or previous JPEG image file

Press ← or → during playback. You can select the first file of the next album by pressing → during playback of the last file of the current album.
Note that you cannot return to the previous album by using ←, and that you need to select the previous album from the album list.

To rotate a JPEG image

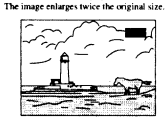
Press ↑/↓ while viewing the image. Each time you press ↑, the image rotates counterclockwise by 90 degrees.
To return to normal view, press CLEAR.
Note that the view also returns to normal if you press ←/→ to go to the next or previous image.
Example: when ↑ is pressed once.



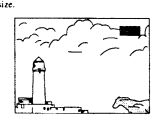
To magnify a JPEG image (ZOOM)

Press ZOOM while viewing the image. You can enlarge the image up to four times the original size, and scroll using ←/↑/↓/→.
To return to normal view, press CLEAR.

→When pressed once (x2)
The image enlarges twice the original size.



→When pressed twice (x4)
The image enlarges four times the original size.



→continued

To stop viewing the JPEG image

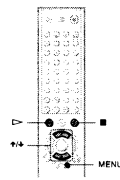
Press ■.

Hints
- While viewing JPEG image files, you can set options such as "INTERVAL" (page 68), "EFFECT" (page 68), and "SHARPNESS" (page 61).
- You can view JPEG images files without MP3 audio by setting "MODE (MP3, JPEG)" to "IMAGE (JPEG)" (page 67).
- The date the picture was taken is displayed beside "DATE" in the Control Menu (page 14). Note that no date may appear depending on the digital camera.

Note
PICTURE NAVI does not work if "AUDIO (MP3)" is selected in "MODE (MP3, JPEG)" (page 67).

Enjoying JPEG Images as a Slide Show DATA CD

You can play JPEG image files on a DATA CD successively as a slide show.



1 Press MENU.
The list of albums on the DATA CD appears.

2 Press ↑/↓ to select an album.

3 Press ▷.
The JPEG images in the selected album start playing as a slide show.

To stop playback

Press ■.

Notes
- The slide show stops when ↑/↓ or ZOOM is pressed.To resume the slide show, press ▷.
- This function does not work if "MODE (MP3, JPEG)" is set to "AUDIO (MP3)" (page 67).

3 Press ↑/↓ to select a setting.
The default setting is underlined.
- MODE1: the image sweeps in from top to bottom.
- MODE2: the image sweeps in from left to right.
- MODE3: the image stretches out from the centre of the screen.
- MODE4: the images randomly cycle through the effects.
- MODE5: the next image slides over the previous image.
- OFF: turns off this function.

4 Press ENTER.

About DivX Video Files

DivX® is a video file compression technology, developed by DivXNetworks, Inc. This product is an official DivX® Certified product.
You can play DATA CDs and DATA DVDs that contain DivX® video files.

DATA CDs and DATA DVDs that the player can play

Playback of DATA CDs (CD-ROM/CD-R/CD-RWs) and DATA DVDs (DVD-R/DVD RW/DVD+R/DVD+RWs) on this player is subject to certain conditions:
– With DATA CDs that contain DivX video files in addition to MP3 audio tracks or JPEG image files, the player plays only the DivX video files.
– With DATA DVDs, the player plays DivX video files only. Any data other than DivX video file, such as MP3 audio tracks and JPEG image files, are not played.
However, this player only plays DATA CDs whose logical format is ISO 9660 Level 1/ Level 2 or Joliet, and DATA DVDs of Universal Disk Format (UDF).
You can also play DATA CDs recorded in Multi Session (page 62), although DATA DVDs recorded in Multi Session are not playable.
Refer to the instructions supplied with the disc drives and the recording software (not supplied) for details on the recording format.

About playback order of data on DATA CDs or DATA DVDs

See "About playback order of albums, tracks and files" (page 62). Note that the playback order may not be applicable, depending on the software used for creating the DivX video file, or if there are more than 200 albums and 600 DivX video files in each album.

Note
The player may not be able to play some DATA CDs/DATA DVDs created in the Packet Write format.

DivX video files that the player can play

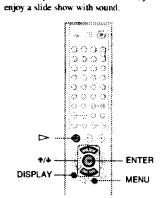
The player can play data that is recorded in DivX format, and which has the extension ".AVI," or ".DIVX." The player will not play files with the extension ".AVI" or ".DIVX" if they do not contain a DivX video.

Hint
For details about playable MP3 audio tracks or JPEG image files on DATA CDs, see "DATA CDs that the player can play" (page 62).

Notes
- The player may not play a DivX video file when the file has been combined from two or more DivX video files.
- The player cannot play a DivX video file of size more than 720 (width) x 576 (height)/2 GB.
- Depending on the DivX video file, the picture may be unclear or the sound may skip.
- The player cannot play some DivX video files that are longer than 3 hours.

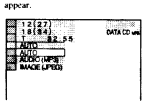
Viewing a slide show with sound (MODE (MP3, JPEG))

When JPEG image files and MP3 audio tracks are placed in the same album, you can enjoy a slide show with sound.



1 Press DISPLAY during stop mode.
The Control Menu appears.

2 Press ↑/↓ to select (MODE (MP3, JPEG)), and press ENTER.
The options for "MODE (MP3, JPEG)" appear.



3 Press ↑/↓ to select "AUTO" (default), and press ENTER.
- AUTO: plays both the JPEG image files and MP3 audio tracks in the same album as a slide show.
- AUDIO (MP3): plays only MP3 audio tracks continuously.
- IMAGE (JPEG): plays only JPEG image files continuously.

4 Press MENU.
The list of albums on the DATA CD appears.

5 Press ↑/↓ to select the album that contains both the MP3 audio tracks and JPEG images you want to play.

6 Press ▷.
A slide show starts with sound.

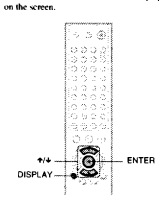
Hints
- To repeat both MP3 audio tracks and JPEG image files in a single album, repeat the same MP3 audio track or album when "MODE (MP3, JPEG)" is set to "AUTO." See "Playing repeatedly (Repeat Play)" (page 42) to repeat the track or album.
- The player recognizes a maximum of 200 albums regardless of the selected mode. Of each album, the player recognizes up to 300 MP3 audio tracks and 300 JPEG image files when "AUTO" is selected, 600 MP3 audio tracks when "AUDIO (MP3)" is selected, 600 JPEG image files when "IMAGE (JPEG)" is selected.

Notes
- This function does not work if the MP3 audio tracks and JPEG image files are not placed in the same album.
- If playing time of JPEG image or MP3 audio is longer than the other, the longer one continues without sound or image.
- If you play large MP3 track data and JPEG image data at the same time, the sound may skip. It is recommended that you set the MP3 bit rate to 128 kbps or lower when creating the file. If the sound still skips, then reduce the size of the JPEG file.

→continued

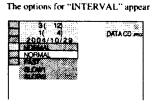
Setting the pace for a slide show (INTERVAL)

You can set the time the slides are displayed on the screen.



1 Press DISPLAY twice while viewing a JPEG image or when the player is in stop mode.
The Control Menu appears.

2 Press ↑/↓ to select (INTERVAL), then press ENTER.
The options for "INTERVAL" appear.



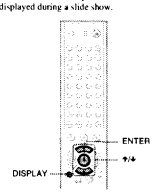
3 Press ↑/↓ to select a setting.
The default setting is underlined.
- NORMAL: sets the duration to between 6 to 9 seconds.
- FAST: sets a duration shorter than NORMAL.
- SLOW1: sets a duration longer than NORMAL.
- SLOW2: sets a duration longer than SLOW1.

4 Press ENTER.

Note
Some JPEG files, especially progressive JPEG files or JPEG files of 3,000,000 pixels or more, may take longer to display than others, which may make the duration seem longer than the setting you selected.

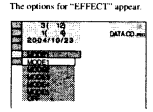
Selecting the slides' appearance (EFFECT)

You can select the way the slides are displayed during a slide show.



1 Press DISPLAY twice while viewing a JPEG image or when the player is in stop mode.

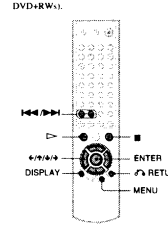
2 Press ↑/↓ to select (EFFECT), then press ENTER.
The options for "EFFECT" appear.



Playing DivX Video Files

DATA CD DATA DVD

You can play DivX video files on DATA CDs (CD-ROM/CD-R/CD-RWs) and DATA DVDs (DVD-R/DVD RW/DVD+R/DVD+RWs).

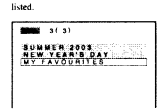


Hints
- You can view the disc information while playing a DivX video file (page 49).
- The player plays DivX video files either in PAL or NTSC colour system according to the current setting (page 59).

Notes
- If there are no DivX video files recorded on a DATA DVD, a message appears to indicate that the disc is not playable.
- Depending on the DivX video file, the picture may pause or be unclear, in which case, it is recommended that you create the file at a lower bit rate. If the sound is still noisy, MP3 is the recommended audio format. Note, however, this player does not conform to WMA (Windows Media Audio) format.
- Because of the compression technology used for DivX video files, it may take some time after you press ▷ for the picture to appear.
- Depending on the DivX video file, the sound may not match the pictures on the screen.

Selecting an album

1 Press MENU.
A list of albums on the disc appears. Only albums that contain DivX video files are listed.



2 Press ↑/↓ to select the album you want to play.

3 Press ▷.
Playback starts from the selected album. To select DivX video files, see "Selecting a DivX video file" (page 72).

To stop playback

Press ■.

To go to the next or previous page

Press → or ←.

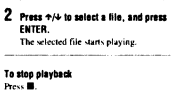
To turn the display on or off

Press MENU repeatedly.

→continued

Selecting a DivX video file

1 After step 2 of "Selecting an album," press ENTER.
The list of files in the album appears.



2 Press ↑/↓ to select a file, and press ENTER.
The selected file starts playing.

To stop playback

Press ■.

To go to the next or previous page

Press → or ←.

To return to the previous display

Press ↩ RETURN.

To go to the next or previous DivX video file without turning on the above file list

You can select the next or previous DivX video file in the same album by pressing ⏭ or ⏮.
You can also select the first file of the next album by pressing ⏭ during playback of the last file of the current album. Note that you cannot return to the previous album by using ⏮. To return to the previous album, select it from the album list.

Hint
If the number of viewing times is preset, you can play the DivX video files as many times as the preset number. The following occurrences are counted:
– when the player is turned off. This includes when the player is automatically turned off by the Auto Power Off function. Press ⏸ instead of ■ when you want to stop viewing.
– when the disc tray is opened.
– when another file is played.

Using Various Additional Functions

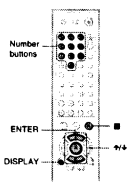
Locking Discs (CUSTOM PARENTAL CONTROL, PARENTAL CONTROL)

You can set two kinds of playback restrictions for a disc.
- Custom Parental Control
  You can set playback restrictions so that the player will not play inappropriate discs.
- Parental Control
  Playback of some DVD VIDEOs can be limited according to a predetermined level such as the age of the users. Scenes may be blocked or replaced with different scenes.

The same password is used for both Parental Control and Custom Parental Control.

Custom Parental Control DVD VR VIDEO CD

You can set the same Custom Parental Control password for up to 40 discs. When you set the 41st disc, the first disc is cancelled.



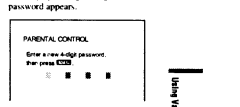
1 Insert the disc you want to lock.
If the disc is playing, press ■ to stop playback.

2 Press DISPLAY while the player is in stop mode.
The Control Menu appears.

3 Press +/+ to select (PARENTAL CONTROL), then press ENTER.
The options for "PARENTAL CONTROL" appear.

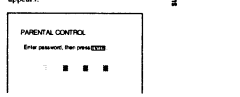
4 Press +/+ to select "ON →," then press ENTER.

◆ If you have not entered a password
The display for registering a new password appears.



Enter a 4-digit password using the number buttons, then press ENTER.
The display for confirming the password appears.

◆ When you have already registered a password
The display for entering the password appears.



→continued 73

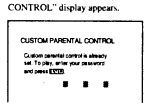
5 Enter or re-enter your 4-digit password using the number buttons, then press ENTER.
"Custom parental control is set." appears and then the screen returns to the Control Menu.

To turn off the Custom Parental Control function

1 Follow steps 1 to 3 of "Custom Parental Control."
2 Press +/+ to select "OFF →," then press ENTER.
3 Enter your 4-digit password using the number buttons, then press ENTER.

To play a disc for which Custom Parental Control is set

1 Insert the disc for which Custom Parental Control is set.
The "CUSTOM PARENTAL CONTROL" display appears.

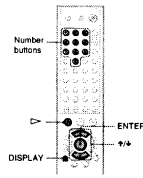


2 Enter your 4-digit password using the number buttons, then press ENTER.
The player is ready for playback.

Hint
If you forget your password, enter the 6-digit number "199703" using the number buttons when the "CUSTOM PARENTAL CONTROL" display asks you for your password, then press ENTER. The display will ask you to enter a new 4-digit password.

Parental Control (limited playback) DVD VR

Playback of some DVD VIDEOs can be limited according to a predetermined level such as the age of the users. The "PARENTAL CONTROL" function allows you to set a playback limitation level.



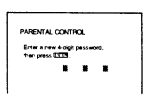
1 Press DISPLAY while the player is in stop mode.
The Control Menu appears.

2 Press +/+ to select (PARENTAL CONTROL), then press ENTER.
The options for "PARENTAL CONTROL" appear.

3 Press +/+ to select "PLAYER →," then press ENTER.

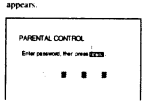
◆ If you have not entered a password
The display for registering a new password appears.

→continued 75

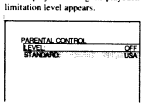


Enter a 4 digit password using the number buttons, then press ENTER.
The display for confirming the password appears.

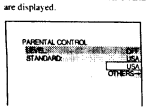
◆ When you have already registered a password
The display for entering the password appears.



4 Enter or re-enter your 4-digit password using the number buttons, then press ENTER.
The display for setting the playback limitation level appears.

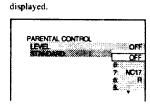


5 Press +/+ to select "STANDARD," then press ENTER.
The selection items for "STANDARD" are displayed.

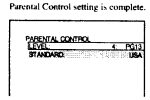


6 Press +/+ to select a geographic area as the playback limitation level, then press ENTER.
The area is selected.
When you select "OTHERS →," select and enter a standard code in the table on page 76 using the number buttons.

7 Press +/+ to select "LEVEL," then press ENTER.
The selection items for "LEVEL" are displayed.



8 Select the level you want using +/+, then press ENTER.
Parental Control setting is complete.



The lower the value, the stricter the limitation.

To turn off the Parental Control function

Set "LEVEL" to "OFF" in step 8.

To play a disc for which Parental Control is set

1 Insert the disc and press ⊳.
The display for entering your password appears.
2 Enter your 4-digit password using the number buttons, then press ENTER.
The player starts playback.

→continued 76

Hint
If you forget your password, remove the disc and repeat steps 1 to 3 of "Parental Control (limited playback)." When you are asked to enter your password, enter "199703" using the number buttons, then press ENTER. The display will ask you to enter a new 4-digit password. After you enter a new 4-digit password, replace the disc in the player and press ⊳. When the display for entering your password appears, enter your new password.

Notes
- When you play discs which do not have the Parental Control function, playback cannot be limited on this player.
- Depending on the disc, you may be asked to change the parental control level while playing the disc. In this case, enter your password, then change the level. If the Resume Play mode is cancelled, the level returns to the previous level.

Area Code

Standard	Code number
Argentina	2044
Australia	2047
Austria	2046
Belgium	2057
Brazil	2070
Canada	2079
Chile	2090
China	2092
Denmark	2115
Finland	2165
France	2174
Germany	2109
India	2248
Indonesia	2238
Italy	2254
Japan	2276
Korea	2304
Malaysia	2363
Mexico	2362
Netherlands	2376
New Zealand	2390
Norway	2379
Pakistan	2427
Philippines	2424
Portugal	2436
Russia	2489
Singapore	2501
Spain	2119
Sweden	2499
Switzerland	2086
Thailand	2528
United Kingdom	2184

Changing the password

1 Press DISPLAY while the player is in stop mode.
The Control Menu appears.

2 Press +/+ to select (PARENTAL CONTROL), then press ENTER.
The options for "PARENTAL CONTROL" appear.

3 Press +/+ to select "PASSWORD →," then press ENTER.
The display for entering the password appears.

4 Enter your 4-digit password using the number buttons, then press ENTER.

5 Enter a new 4-digit password using the number buttons, then press ENTER.

6 To confirm your password, re-enter it using the number buttons, then press ENTER.

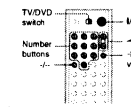
If you make a mistake entering your password
Press ❖ before you press ENTER and input the correct number.

Controlling Your TV or AV amplifier (Receiver) With the Supplied Remote

By adjusting the remote signal, you can control your TV with the supplied remote. If you connect the player to an AV amplifier (receiver), you can control the volume with the supplied remote.

Notes
- Depending on the connected unit, you may not be able to correctly control your TV or AV amplifier (receiver) using some of the buttons below.
- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote, the code number you have set may be reset to the default setting. Set the appropriate code number again.

Controlling TVs with the remote



1 Slide the TV/DVD switch to TV.

2 While holding down I/⏻, press the number buttons to select the manufacturer's code for your TV (see the table below).

3 Release I/⏻.
When the TV/DVD switch is set to TV, the remote performs the following:

I/⏻	Turn the TV on or off
+/- (volume)	Adjust the volume of the TV
Number buttons and -/--	Select the programme position of the TV
(TV/video)	Switch the TV's input source between the TV and other input sources

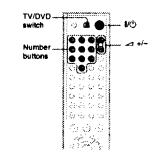
→continued 77

Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

Manufacturer	Code number
Sony	01 (default)
Aiwa	01 (default)
Grundig	11
Hitachi	23, 24, 72
Loewe	06, 45
Nokia	15, 16, 69, 73
Panasonic	17, 49
Philips	06, 07, 08, 23, 45, 72
Saba	12, 13, 36, 43, 74, 75
Samsung	06, 22, 23, 71, 72
Sanyo	25
Sharp	29
Telefunken	12, 13, 36, 43, 74, 75
Thomson	12, 13, 43, 74, 75
Toshiba	38
LG	06
JVC	33

Controlling the volume of your AV amplifier (receiver) with the remote



1 Slide the TV/DVD switch to DVD.

2 Hold down I/⏻, and enter the manufacturer code (see the table below) for your AV amplifier (receiver) using the number buttons.

3 Release I/⏻.
The (volume) +/- buttons control the AV amplifier's volume.

◆ If you want to control the TV's volume
Slide the TV/DVD switch to TV.

Code numbers of controllable AV amplifiers (receivers)

If more than one code number is listed, try entering them one at a time until you find the one that works with your AV amplifier (receiver).

Manufacturer	Code number
Sony	78, 79, 80, 91
Denon	84, 85, 86
Kenwood	92, 93
Onkyo	81, 82, 83
Pioneer	99
Sansui	87
Technics	97, 98
Yamaha	94, 95, 96

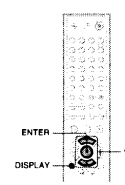
Hint
If you want to control the TV's volume even when the TV/DVD switch is set to DVD, repeat the steps above and enter the code number 90 (default).

Settings and Adjustments

Using the Setup Display

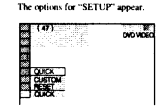
By using the Setup Display, you can make various adjustments to items such as picture and sound. You can also set a language for the subtitles and the Setup Display, among other things.
For details on each Setup Display item, see pages from 80 to 85.

Note
Playback settings stored in the disc take priority over the Setup Display settings and not all of the functions described may work.

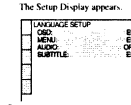


1 Press DISPLAY when the player is in stop mode.
The Control Menu appears.

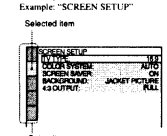
2 Press +/+ to select (SETUP), then press ENTER.
The options for "SETUP" appear.



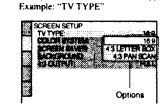
3 Press +/+ to select "CUSTOM," then press ENTER.
The Setup Display appears.



4 Press +/+ to select the setup item from the displayed list: "LANGUAGE SETUP," "SCREEN SETUP," "CUSTOM SETUP," "AUDIO SETUP," or "SPEAKER SETUP." Then press ENTER.
The Setup item is selected.
Example: "SCREEN SETUP"

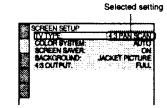


5 Press +/+ to select an item, then press ENTER.
The options for the selected item appear.
Example: "TV TYPE"



→continued 79

6 Press +/+ to select a setting, then press ENTER.
The setting is selected and setup is complete.
Example: "4:3 PAN SCAN"



To enter the Quick Setup mode

Select "QUICK" in step 3. Follow from step 5 of the Quick Setup explanation to make basic adjustments (page 29).

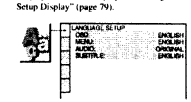
To reset all of the "SETUP" settings

1 Select "RESET" in step 3 and press ENTER.
2 Select "YES" using +/+.
You can also quit the process and return to the Control Menu by selecting "NO" here.
3 Press ENTER.
All the settings explained on pages 80 to 85 return to the default settings. Do not press I/⏻ while resetting the player, which takes a few seconds to complete.

Setting the Display or Sound Track Language (LANGUAGE SETUP)

"LANGUAGE SETUP" allows you to set various languages for the on-screen display or sound track.

Select "LANGUAGE SETUP" in the Setup Display. To use the display, see "Using the Setup Display" (page 79).



◆ OSD (On-Screen Display)
Switches the display language on the screen.

◆ MENU (DVD VIDEO only)
You can select the desired language for the disc's menu.

◆ AUDIO (DVD VIDEO only)
Switches the language of the sound track. When you select "ORIGINAL," the language given priority in the disc is selected.

◆ SUBTITLE (DVD VIDEO only)
Switches the language of the subtitle recorded on the DVD VIDEO.
When you select "AUDIO FOLLOW," the language for the subtitles changes according to the language you selected for the sound track.

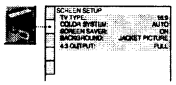
Hint
If you select "OTHERS →" in "MENU," "SUBTITLE," or "AUDIO," select and enter a language code from "Language Code List" on page 96 using the number buttons.

Note
If you select a language in "MENU," "SUBTITLE," or "AUDIO" that is not recorded on a DVD VIDEO, one of the recorded languages will be automatically selected.

Settings for the Display
(SCREEN SETUP)

Choose settings according to the TV to be connected.

Select "SCREEN SETUP" in the Setup Display. To use the display, see "Using the Setup Display" (page 79).
The default settings are underlined.



◆ TV TYPE
Selects the aspect ratio of the connected TV (4:3 standard or wide).

16:9	Select this when you connect a wide-screen TV or a TV with a wide mode function.
4:3 LETTER BOX	Select this when you connect a 4:3 screen TV. Displays a wide picture with bands on the upper and lower portions of the screen.
4:3 PAN SCAN	Select this when you connect a 4:3 screen TV. Automatically displays the wide picture on the entire screen and cuts off the portions that do not fit.

16:9

4:3 LETTER BOX

4:3 PAN SCAN

Notes
- Depending on the DVD, "4:3 LETTER BOX" may be selected automatically instead of "4:3 PAN SCAN" or vice versa.
- The default setting of "TV TYPE" differs depending upon the player model.

◆ COLOR SYSTEM (VIDEO CD only)
Selects the color system when you play a VIDEO CD.

AUTO	Outputs the video signal in the system of the VIDEO CD, either PAL or NTSC. If your TV is the DUAL system, select AUTO.
PAL	Changes the video signals of an NTSC VIDEO CD and outputs it in the PAL system.
NTSC	Changes the video signals of a PAL VIDEO CD and outputs it in the NTSC system.

◆ SCREEN SAVER
The screen saver image appears when you leave the player in pause or stop mode for 15 minutes, or when you play a Super Audio CD, CD, or DATA CD (MP3 audio) for more than 15 minutes. The screen saver will help prevent your display device from becoming damaged (ghosting). Press ⊏▷ to turn off the screen saver.

ON	Turns on the screen saver.
OFF	Turns off the screen saver.

◆ BACKGROUND
Selects the background colour or picture on the TV screen when the player is in stop mode or while playing a Super Audio CD, CD, or DATA CD (MP3 audio).

JACKET PICTURE	The jacket picture (still picture) appears, but only when the jacket picture is already recorded on the disc (CD-EXTRA, etc.). If the disc does not contain a jacket picture, the "GRAPHICS" picture appears.
GRAPHICS	A preset picture stored in the player appears.
BLUE	The background colour is blue.
BLACK	The background colour is black.

➡continued

◆ 4:3 OUTPUT
This setting is effective only when you set "TV TYPE" in "SCREEN SETUP" to "16:9."
Adjust this to watch 4:3 aspect ratio progressive signals. If you can change the aspect ratio on your progressive format (525p/625p) compatible TV, change the setting on your TV, not the player. This setting is effective only when "PROGRESSIVE AUTO" or "PROGRESSIVE VIDEO" is selected by using the PROGRESSIVE button on the front panel.

FULL	Select this when you can change the aspect ratio on your TV.
NORMAL	Select this when you cannot change the aspect ratio on your TV. Shows a 16:9 aspect ratio signal with black bands on left and right sides of the image.

16:9 aspect ratio TV

Custom Settings (CUSTOM SETUP)

Use this to set up playback related and other settings.

Select "CUSTOM SETUP" in the Setup Display. To use the display, see "Using the Setup Display" (page 79).
The default settings are underlined.

◆ AUTO PLAY
Switches the Auto Play setting on or off. This function is useful when the player is connected to a timer (not supplied).

OFF	Switches this function off.
ON	Automatically starts playback when the player is turned on by a timer (not supplied).

◆ DIMMER
Adjusts the lighting of the front panel display.

BRIGHT	Makes the lighting bright.
DARK	Makes the lighting dark.
AUTO DARK	Makes the lighting dark if you do not operate the player or remote for a short while.

◆ PAUSE MODE (DVD VIDEO/DVD-RW only)
Selects the picture in pause mode.

AUTO	The picture, including subjects that move dynamically, is output with no jitter. Normally select this position.
FRAME	The picture, including subjects that do not move dynamically, is output in high resolution.

◆ MPEG (DVD VIDEO/DVD-RW only)
Selects the type of MPEG audio signal.

PCM	Select this when the player is connected to an audio component without a built-in MPEG decoder. If you play multi-channel MPEG audio sound tracks, only the Front (L) and Front (R) signals will be output from your two front speakers.
MPEG	Select this when the player is connected to an audio component with a built-in MPEG decoder.

◆ DTS
Selects the type of DTS audio signals.

D-PCM	Select this when the player is connected to an audio component without a built-in DTS decoder.
DTS	Select this when the player is connected to an audio component with a built-in DTS decoder.

◆ 48kHz/96kHz PCM (DVD VIDEO only)
Selects the sampling frequency of the audio signal.

48kHz/16bit	The audio signals of DVD VIDEOs are always converted to 48kHz/16bit.
96kHz/24bit	All types of signals including 96kHz/24bit are output in their original format. However, if the signal is encrypted for copyright protection purposes, the signal is only output as 48kHz/16bit.

Note
The analogue audio signals from the LINE OUT L/R (AUDIO) jacks and 5.1CH OUTPUT jacks are not affected by this setting and keep their original sampling frequency level.

Settings for the Speakers
(SPEAKER SETUP)

To obtain the best possible surround sound, set the size of the speakers you have connected and their distance from your listening position. Then use the test tone to adjust the volume of the speakers to the same level.
This setting is effective when connecting the speaker with 5.1 CH OUTPUT jacks (page 27).

Select "SPEAKER SETUP" in the Setup Display. To use the display, see "Using the Setup Display" (page 79).
The default settings are underlined.

To return to the default setting
Select the item, then press CLEAR. Note that only the "SIZE" setting does not return to the default setting.

◆ SIZE
Selects the size of the speakers.
• FRONT

LARGE	Normally select this position.
SMALL	Select this when the speaker cannot reproduce adequate bass frequencies.

• CENTER

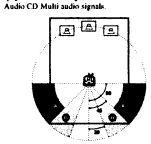
LARGE	Normally select this position.
SMALL	Select this when the speaker cannot reproduce adequate bass frequencies.
NONE	Select this if you do not connect a centre speaker.

➡continued

• REAR

LARGE	(REAR/SIDE): Normally select this position. Select according to the rear speaker position*.
SMALL	(REAR/SIDE): Select this when the sound distorts or the surround effects are difficult to hear. Select according to the rear speaker position*.
NONE	Select this if you do not connect rear speakers.

* Rear speaker position
Correctly specify the location of the rear speakers to enjoy the surround effect.
• Set to "SIDE," if the location of the rear speakers corresponds to section ❶ below.
• Set to "REAR," if the location of the rear speakers corresponds to section ❷ below.
This setting affects only "VIRTUAL REAR SHIFT," "VIRTUAL MULTI REAR," and "VIRTUAL MULTI DIMENSION" mode (page 55). This setting does not affect the Super Audio CD Multi audio signals.

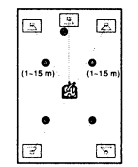


• SUBWOOFER

YES	Select this if you connect a subwoofer to output the LFE (Low Frequency Effect) signals from the subwoofer.
NONE	Select this if you do not connect a subwoofer.

Notes
- The cut-off frequency for the subwoofer is fixed at 120 Hz.
- If your speakers are too small to reproduce low bass frequencies, utilize a subwoofer for low frequency sound. When you set the speaker settings to "SMALL," the bass redirection circuitry will be activated and the bass frequencies for the speakers are output from the subwoofer.
- Even if there are fewer than 6 speakers connected, the player distributes the audio signal components to the front speakers.

◆ DISTANCE
Sets the distance from your listening position to the speakers.
Set the distance to you front speakers in "FRONT" first (❶). Then adjust the values in "CENTER" (centre speaker ❶), and "REAR" (rear speaker ❷) to reflect the actual distance to your centre speaker, and rear speakers.



Be sure to change the value in the Setup Display each time you move the speakers. Start from the front speaker. The default adjustments are in parentheses.

FRONT (3 m)	Set this between 1 and 15 m in 0.2 m increments.
CENTER (3 m)	Set this within –1.6 and +0.6 m of the "FRONT" setting in 0.2 m increments. For example, if "FRONT" is set to 6 m, "CENTER" can be set between 4.4 and 6.6 m.
REAR (3 m)	Set this within –5 and +0.6 m of the "FRONT" setting in 0.2 m increments. For example, if "FRONT" is set to 6 m, "REAR" can be set between 1 and 6.6 m.

◆ TRACK SELECTION (DVD VIDEO only)
Gives the sound track which contains the highest number of channels priority when you play a DVD VIDEO on which multiple audio formats (PCM, MPEG audio, DTS, or Dolby Digital format) are recorded.

OFF	No priority given.
AUTO	Priority given.

Notes
- When you set the item to "AUTO," the language may change. The "TRACK SELECTION" setting has higher priority than the "AUDIO" settings in "LANGUAGE SETUP" (page 80).
- If PCM, DTS, MPEG audio, and Dolby Digital sound tracks have the same number of channels, the player selects PCM, DTS, Dolby Digital, and MPEG audio sound tracks in this order.

◆ MULTI-DISC RESUME (DVD VIDEO/VIDEO CD only)
Switches the Multi-disc Resume setting on or off. Resume playback can be stored in memory for up to 40 different DVD VIDEOs/VIDEO CDs (page 35).

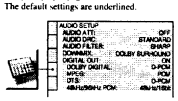
ON	Stores the resume setting in memory for up to 40 discs.
OFF	Does not store the resume setting in memory. Playback restarts at the resume point only for the current disc in the player.

◆ DivX
Displays the registration code for this player. For more information, go to http://www.divx.com on the Internet.

Settings for the Sound
(AUDIO SETUP)

"AUDIO SETUP" allows you to set the sound according to the playback and connection conditions.

Select "AUDIO SETUP" in the Setup Display. To use the display, see "Using the Setup Display" (page 79).
The default settings are underlined.



◆ AUDIO ATT (attenuation)
If the playback sound is distorted, set this item to "ON." The player reduces the audio output level.
This function affects the output of the following jacks:
– LINE OUT L/R (AUDIO) jacks
– 5.1CH OUTPUT jacks

OFF	Normally, select this position.
ON	Select this when the playback sound from the speakers is distorted.

◆ AUDIO DRC (Dynamic Range Control) (DVD VIDEO/DVD-RW only)
Makes the sound clear when the volume is turned down when playing a DVD that conforms to "AUDIO DRC."
This function affects the output from the following jacks:
– LINE OUT L/R (AUDIO) jacks
– 5.1 CH OUTPUT jacks
– DIGITAL OUT (OPTICAL or COAXIAL) jack only when "DOLBY DIGITAL" is set to "D-PCM" (page 84).

STANDARD	Normally select this position.
TV MODE	Makes low sounds clear even if you turn the volume down.
WIDE RANGE	Gives you the feeling of being at a live performance.

➡continued

◆ AUDIO FILTER
Selects the digital filter to reduce noise above 22.05 kHz (Sampling frequency (Fs) of the audio source is 44.1 kHz), 24 kHz (Fs is 48 kHz), or 48 kHz (Fs is above 96 kHz).

SHARP	Provides a wide frequency range and spatial feeling.
SLOW	Provides smooth and warm sound.

Note
There may be little effect by changing the digital filter depending on the disc or playback environment.

◆ DOWNMIX (DVD VIDEO/DVD-RW only)
Switches the method for mixing down to 2 channels when you play a DVD which has rear sound elements (channels) or is recorded in Dolby Digital format. For details on the rear signal components, see "Checking the audio signal format" (page 53). This function affects the output of the following jacks:
– LINE OUT L/R (AUDIO) jacks
– DIGITAL OUT (OPTICAL or COAXIAL) jack when "DOLBY DIGITAL" and "DTS" is set to "D-PCM" (page 84).

DOLBY SURROUND	Normally, select this position. Multi-channel audio signals are output to 2 channels for enjoying surround sounds.
NORMAL	Multi-channel audio signals are downmixed to 2 channels for use with your stereo.

◆ DIGITAL OUT
Selects if audio signals are output via the DIGITAL OUT (OPTICAL or COAXIAL) jack.

ON	Normally select this position. When you select "ON," see "Setting the digital output signal" for further settings.
OFF	The influence of the digital circuit upon the analog circuit is minimal.

Note
Super Audio CD audio signals are not output from a DIGITAL OUT jack.

Setting the digital output signal

Switches the method of outputting audio signals when you connect a component such as an amplifier (receiver) or MD deck with a digital input jack.
For connection details, see page 22.
Select "DOLBY DIGITAL," "MPEG," "DTS," and "48kHz/96kHz PCM" after setting "DIGITAL OUT" to "ON."

If you connect a component that is incompatible with the selected audio signal, a loud noise (or no sound) may be heard from the speakers, risking damage to your ears or speakers.

◆ DOLBY DIGITAL (DVD VIDEO/DVD-RW only)
Selects the type of Dolby Digital signal.

D-PCM	Select this when the player is connected to an audio component without a built-in Dolby Digital decoder. You can select whether the signals conform to Dolby Surround (Pro Logic) or not by making adjustments to the "DOWNMIX" item in "AUDIO SETUP" (page 84).
DOLBY DIGITAL	Select this when the player is connected to an audio component with a built-in Dolby Digital decoder.

◆ TEST TONE
The speakers will emit a test tone. Use this when you use the 5.1CH OUTPUT jacks and adjust "LEVEL (FRONT)" and "LEVEL (REAR)."

OFF	The test tone is not emitted from the speakers.
ON	The test tone is emitted from each speaker in sequence while adjusting level.

Note
If each of the front or rear speakers are not placed at an equal distance from your listening position, set the distance according to the closest speaker.

◆ LEVEL (FRONT)
Varies the level of the front speakers. Be sure to set "TEST TONE" to "ON" for easy adjustment.
The default adjustments are in parentheses.

L (0 dB)	Set this between –6 dB and 0 dB in 0.5 dB increments.
R (0 dB)	Set this between –6 dB and 0 dB in 0.5 dB increments.
CENTER (0 dB)	Set this between –12 dB and 0 dB in 0.5 dB increments.
SUBWOOFER (–5 dB)	Set this between –15 dB and +5 dB in 0.5 dB increments.

◆ LEVEL (REAR)
Varies the level of the rear speakers. Be sure to set "TEST TONE" to "ON" for easy adjustment.
The default adjustments are in parentheses.

L (0 dB)	Set this between –12 dB and 0 dB in 0.5 dB increments.
R (0 dB)	Set this between –12 dB and 0 dB in 0.5 dB increments.

To adjust the volume of all the speakers at one time
Use the amplifier's (receiver's) volume control.

Adjusting the speaker volume and level

1 **Select "SPEAKER SETUP" in the Setup Display.**

2 **Select "TEST TONE" and set to "ON."**
You will hear the test tone from each speaker in sequence.

3 **From your listening position, select "LEVEL (FRONT)" or "LEVEL (REAR)" and adjust the value using ↑/↓.**
The test tone is emitted from both left and right speakers simultaneously.

4 **Select "TEST TONE" and set to "OFF" to turn off the test tone.**

Note
The test tone signals are not output from the digital jack.

Additional Information

Troubleshooting

If you experience any of the following difficulties while using the player, use this troubleshooting guide to help remedy the problem before requesting repairs. Should any problem persist, consult your nearest Sony dealer.

Power

The power is not turned on.
➡ Check that the mains lead is connected securely.

Picture

There is no picture/picture noise appears.
➡ Re-connect the connecting cord securely.
➡ The connecting cords are damaged.
➡ Check the connection to your TV (page 18) and switch the input selector on your TV so that the signal from the player appears on the TV screen.
➡ The disc is dirty or flawed.
➡ If the picture output from your player goes through your VCR to get to your TV or if you are connected to a combination TV/VIDEO player, the copy-protection signal applied to some DVD programmes could affect picture quality. If you still experience problems even when you connect your player directly to your TV, try connecting your player to your TV's S VIDEO input (page 18).
➡ The disc is recorded in a colour system that is different from your TV.
➡ You have selected "PROGRESSIVE (AUTO)" or "PROGRESSIVE (VIDEO)" using the PROGRESSIVE button on the front panel (the PROGRESSIVE indicator lights up) even though your TV cannot accept the progressive signal. In this case, select "NORMAL (INTERLACE)" so that the PROGRESSIVE indicator turns off.
➡ If the colour system of your player does not match with that of your TV, change the colour system of the player. For details, see page 19. (You cannot change the colour system of the DVD disc itself.)
➡ Even if your TV is compatible with progressive format 525p/625p signals, the image may be affected when you set the player to progressive format. In this case, select "NORMAL (INTERLACE)" using the PROGRESSIVE button on the front panel so that the PROGRESSIVE indicator turns off and the player is set to normal (interlace) format.

The picture does not fill the screen, even though the aspect ratio is set in "TV TYPE" under "SCREEN SETUP."
➡ The aspect ratio of the disc is fixed on your DVD.

The picture is black and white.
➡ Depending on the TV, the picture on the screen becomes black and white when you play a disc recorded in the NTSC colour system.

Sound

There is no sound.
➡ Re-connect the connecting cord securely.
➡ The connecting cord is damaged.
➡ The player is connected to the wrong input jack on the amplifier (receiver) (page 25, 26, 27).
➡ The amplifier (receiver) input is not correctly set.
➡ The player is in pause mode or in Slow-motion Play mode.
➡ The player is in fast forward or fast reverse mode.
➡ If the audio signal does not come through the DIGITAL OUT (OPTICAL or COAXIAL) jack, check the audio settings (page 84).
➡ Super Audio CD audio signals are not output from the DIGITAL OUT (OPTICAL or COAXIAL) jack.
➡ While playing a Super VCD on which the audio track 2 is not recorded, no sound will come out when you select "2:STEREO," "2:1/L," or "2:2/R."

Sound distortion occurs.
➡ Set "AUDIO ATT" in "AUDIO SETUP" to "ON" (page 83).

The sound volume is low.
- ➡ The sound volume is low on some DVDs. The sound volume may improve if you set "AUDIO DRC" in "AUDIO SETUP" to "TV MODE" (page 83).
- ➡ Set "AUDIO ATT" in "AUDIO SETUP" to "OFF" (page 83).

The surround effect is difficult to hear when you are playing a Dolby Digital, MPEG audio, or DTS sound track.
- ➡ Check the speaker connections and setting (page 27, 29, 84).
- ➡ The 5.1 channel sound is not recorded on the disc being played.

The sound comes from the centre speaker only.
- ➡ Depending on the disc, the sound may come from the centre speaker only.
- ➡ Set the surround mode setting to "OFF" (page 54).

Operation

The remote does not function.
- ➡ The batteries in the remote are weak.
- ➡ There are obstacles between the remote and the player.
- ➡ The distance between the remote and the player is too far.
- ➡ The remote is not pointed at the remote sensor on the player.

The disc does not play.
- ➡ The disc is turned over. Insert the disc with the playback side facing down.
- ➡ The disc is skewed.
- ➡ The player cannot play certain discs (page 7).
- ➡ The region code on the DVD does not match the player.
- ➡ Moisture has condensed inside the player (page 3).
- ➡ The player cannot play a recorded disc that is not correctly finalized (page 7).

The MP3 audio track cannot be played (page 63).
- ➡ The DATA CD is not recorded in an MP3 format that conforms to ISO 9660 Level 1/ Level 2 or Joliet.
- ➡ The MP3 audio track does not have the extension ".MP3."
- ➡ The data is not formatted in MP3 even though it has the extension ".MP3."
- ➡ The data is not MPEG1 Audio Layer 3 data.
- ➡ The player cannot play audio tracks in MP3PRO format.
- ➡ "MODE (MP3, JPEG)" is set to "IMAGE (JPEG)" (page 67).
- ➡ The DATA CD contains a DivX video file.
- ➡ This player cannot play MP3 audio tracks recorded on DATA DVDs.

The JPEG image file cannot be played (page 63).
- ➡ The DATA CD is not recorded in a JPEG format that conforms to ISO 9660 Level 1/ Level 2, or Joliet.
- ➡ The file has an extension other than ".JPEG" or ".JPG."
- ➡ The image is larger than 3072 (width) × 2048 (height) in normal mode, or more than 3,300,000 pixels in progressive JPEG. (Some progressive JPEG files cannot be displayed even if the file size is within this specified capacity.)
- ➡ The image does not fit the screen (the image is reduced).
- ➡ "MODE (MP3, JPEG)" is set to "AUDIO (MP3)" (page 67).
- ➡ The DATA CD contains a DivX video file.
- ➡ This player cannot play JPEG image files recorded on DATA DVDs.

The MP3 audio tracks and JPEG image files start playing simultaneously.
- ➡ "MODE (MP3, JPEG)" is set to "AUTO." (page 67).

The DivX video file cannot be played.
- ➡ The file is not created in DivX format.
- ➡ The file has an extension other than ".AVI" or ".DIVX."
- ➡ The DATA CD (DivX video/DATA DVD is not created in a DivX format that conforms to ISO 9660 Level 1/Level 2 or, Joliet/UDF.
- ➡ The DivX video file is larger than 720 (width) × 576 (height).

➡ continued

The album/track/file names are not displayed correctly.
- ➡ The player can only display numbers and alphabet. Other characters are displayed as "•".

The disc does not start playing from the beginning.
- ➡ Programme Play, Shuffle Play, Repeat Play, or A-B Repeat Play is selected (page 40).
- ➡ Resume play has taken effect (page 35).

The player starts playing the disc automatically.
- ➡ The disc features an auto playback function.
- ➡ "AUTO PLAY" in "CUSTOM SETUP" is set to "ON" (page 82).

"Copyright lock" appears and the screen turns blue when playing a DVD-RW disc.
- ➡ Images taken from digital broadcasts, etc., may contain copy protection signals, such as complete copy protection signals, single copy signals, and restriction-free signals. When images that contain copy protection signals are played, a blue screen may appear instead of the images. It may take a while when looking for playable images. (Non-Oceanian model only)

Playback stops automatically.
- ➡ While playing discs with an auto pause signal, the player stops playback at the auto pause signal.

Some functions such as Stop, Search, Slow-motion Play, Repeat Play, Shuffle Play, or Programme Play cannot be performed.
- ➡ Depending on the disc, you may not be able to do some of the operations above. Refer to the operating manual that comes with the disc.

The language for the sound track cannot be changed.
- ➡ Try using the DVD's menu instead of the direct selection button on the remote (page 36).
- ➡ Multilingual tracks are not recorded on the DVD being played.
- ➡ The DVD prohibits the changing of the language for the sound track.

The subtitle language cannot be changed or turned off.
- ➡ Try using the DVD's menu instead of the direct selection button on the remote (page 36).
- ➡ Multilingual subtitles are not recorded on the DVD being played.
- ➡ The DVD prohibits the changing of subtitles.

The angles cannot be changed.
- ➡ Try using the DVD's menu instead of the direct selection button on the remote (page 36).
- ➡ Multi-angles are not recorded on the DVD being played.
- ➡ The angle can only be changed when the "⊟" indicator lights up on the front panel display (page 11).
- ➡ The DVD prohibits changing of the angles.

The player does not operate properly.
- ➡ When static electricity, etc., causes the player to operate abnormally, unplug the player.

5 numbers or letters are displayed on the screen and on the front panel display.
- ➡ The self-diagnosis function was activated. (See the table on page 91.)

The disc tray does not open and "LOCKED" appears on the front panel display.
- ➡ Child Lock is set (page 34).

The disc tray does not open and "TRAY LOCKED" appears on the front panel display.
- ➡ Contact your Sony dealer or local authorized Sony service facility.

"Data error" appears on the TV screen when playing a DATA CD or DATA DVD.
- ➡ The MP3 audio track/JPEG image file/ DivX video file you want to play is broken.
- ➡ The data is not MPEG1 Audio Layer 3 data.
- ➡ The JPEG image file format does not conform to DCF (page 62).

- ➡ The JPEG image file has the extension ".JPG" or ".JPEG," but is not in JPEG format.
- ➡ The file you want to play has the extension ".AVI" or ".DIVX" but is not in DivX format, or is in DivX format but does not conform to a DivX Certified profiles.

Self-diagnosis Function

(When letters/numbers appear in the display)

When the self diagnosis function is activated to prevent the player from malfunctioning, a five-character service number (e.g., C 13 50) with a combination of a letter and four digits appears on the screen and the front panel display. In this case, check the following table.

First three characters of the service number	Cause and/or corrective action
C 13	The disc is dirty or recorded in a format that this player cannot play (page 7). ➡ Clean the disc with a soft cloth or check its format (page 9).
C 31	The disc is not inserted correctly. ➡ Re-insert the disc correctly.
E XX (XX is a number)	To prevent a malfunction, the player has performed the self-diagnosis function. ➡ Contact your nearest Sony dealer or local authorized Sony service facility and give the 5-character service number. Example: E 61 10

Glossary

Album (page 62, 64)
A unit in which to store JPEG image files or MP3 audio tracks on a DATA CD. ("Album" is an exclusive definition for this player.)

Chapter (page 11)
Sections of a picture or a music feature that are smaller than titles. A title is composed of several chapters. Depending on the disc, no chapters may be recorded.

DivX® (page 70)
Digital video technology created by DivXNetworks, Inc. Videos encoded with DivX technology are among the highest quality with a relatively small file size.

Dolby Digital (page 22, 84)
Digital audio compression technology developed by Dolby Laboratories. This technology conforms to multi-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. Dolby Digital provides the same discrete channels of high quality digital audio found in "Dolby Digital" theatre surround sound systems. Good channel separation is realized because all of the channel data is recorded discretely and little deterioration is realized because all channel data processing is digital.

Dolby Surround (Pro Logic) (page 22)
Audio signal processing technology that Dolby Laboratories developed for surround sound. When the input signal contains a surround component, the Pro Logic process outputs the front, centre and rear signals. The rear channel is monaural.

DTS (page 22, 85)
Digital audio compression technology that Digital Theater Systems, Inc. developed. This technology conforms to multi-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. DTS provides the same discrete channels of high quality digital audio.
Good channel separation is realized because all of the channel data is recorded discretely and little deterioration is realized because all channel data processing is digital.

DVD VIDEO (page 6)
A disc that contains up to 8 hours of moving pictures even though its diameter is the same as a CD.
The data capacity of a single-layer and single-sided DVD is 4.7 GB (Giga Byte), which is 7 times that of a CD. The data capacity of a double layer and single-sided DVD is 8.5 GB, a single-layer and double-sided DVD is 9.4 GB, and double-layer and double-sided DVD is 17 GB.
The picture data uses the MPEG 2 format, a worldwide standard of digital compression technology. The picture data is compressed to about 1/40 (average) of its original size. The DVD also uses a variable rate coding technology that changes the data to be allocated according to the status of the picture. Audio information is recorded in a multi-channel format, such as Dolby Digital, allowing you to enjoy a more realistic audio presence.
Furthermore, various advanced functions such as the multi angle, multilingual, and Parental Control functions are provided with the DVD.

DVD-RW (page 6)
A DVD-RW is a recordable and rewritable disc that is the same size as a DVD VIDEO. The DVD-RW has two different modes: VR mode and Video mode. DVD-RWs created in Video mode have the same format as a DVD VIDEO, while discs created in VR (Video Recording) mode allow the contents to be programmed or edited.

DVD+RW (page 6)
A DVD+RW (plus RW) is a recordable and rewritable disc. DVD+RWs use a recording format that is comparable to the DVD VIDEO format.

File (page 62, 65)
A JPEG image recorded on a DATA CD or a DivX video on a DATA CD/DATA DVD ("File" is an exclusive definition for this player.) A single file consists of a single image or movie.

Film based software, Video based software (page 20)
DVDs can be classified as Film based or Video based software. Film based DVDs contain the same images (24 frames per second) that are shown at movie theatres. Video based DVDs, such as television dramas or sit-coms, displays images at 30 frames/60 fields (24 frames/50 fields) per second.

MPEG audio (page 22, 85)
International standard coding system used to compress audio digital signals authorized by ISO/IEC. MPEG 1 conforms to up to 2 channel stereo. MPEG 2, used on DVDs, conforms to up to 7.1-channel surround.

Normal (Interlace) format (page 20)
Normal (Interlace) format shows every other line of an image as a single "field" and is the standard method for displaying images on television. The even number field shows the even numbered lines of an image, and the odd numbered field shows the odd numbered lines of an image.

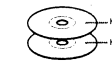
Progressive format (page 20)
Compared to the Interlace format that alternately shows every other line of an image (field) to create one frame, the Progressive format shows the entire image at once as a single frame. This means that while the Interlace format can show 25 or 30 frames (50-60 fields) in one second, the Progressive format can show 50-60 frames in one second. The overall picture quality increases and still images, text, and horizontal lines appear sharper. This player is compatible with the 525 or 625 progressive format.

Progressive JPEG
Progressive JPEGs are used mostly on the internet. They are different from other JPEGs in that they "fade in" gradually instead of being drawn from top to bottom when displayed on a browser. This lets you view the image while it is being downloaded.

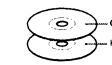
Scene (page 11)
On a VIDEO CD with PBC (playback control) functions, the menu screens, moving pictures and still pictures are divided into sections called "scenes."

Super Audio CD (page 8)
A Super Audio CD disc can reproduce sounds that are extremely faithful to the original sound by use of DSD (Direct Stream Digital) technology. This technology utilizes a sampling frequency of 2.8224 MHz, which is 64 times that of a conventional CD, and 1-bit quantization that enables the disc to hold 4 times the amount of information that a standard PCM format CD can hold. Super Audio CDs are divided into the following types.
- Super Audio CD (single layer disc)
  This disc consists of a single HD layer*.
  *High density signal layer for the Super Audio CD

- Super Audio CD (dual layer disc)
  This disc consists of dual HD layers and is capable of extended play over long periods. Also, as the dual layer disc consists of dual HD layers on one side only, you do not have to turn the disc over during playback.



- Super Audio CD + CD (Hybrid disc)
  This disc consists of an HD layer and a CD layer. Also, as the dual layers are on one side only, you do not have to turn the disc over during playback. You can play the CD layer using a conventional CD player.



- 2 channel + Multi-channel Super Audio CD
  This disc consists of the 2 channel playback area and the multi-channel playback area.

Title (page 14)
The longest section of a picture or music feature on a DVD, movie, etc., in video software, or the entire album in audio software.

Track (page 14)
Sections of a picture or a music feature on a VIDEO CD, CD or DATA CD (the length of a song). ("Track" in DATA CD is an exclusive definition for this player.)

Video Index (VIDEO CD) (page 14)
A number that divides a track into sections to easily locate the point you want on a VIDEO CD. Depending on the disc, no index may be recorded.

Specifications

System
Laser: Semiconductor laser
Signal format system: PAL/NTSC (See page 19 to switch)

Audio characteristics
Frequency response: DVD VIDEO (PCM 96 kHz): 2 Hz to 44 kHz (44 kHz: –2 dB ±1 dB/Super Audio CD: 2 Hz to 100 kHz (50 kHz: –3 dB ±1 dB)/CD: 2 Hz to 20 kHz (±0.5 dB)
Signal-to-noise ratio (S/N ratio): 115 dB (LINE OUT L/R (AUDIO) jacks only)
Harmonic distortion: 0.003 %
Dynamic range: DVD VIDEO/Super Audio CD: 103 dB/CD: 99 dB
Wow and flutter: Less than detected value (±0.001% W PEAK)

Outputs
(**Jack name:** Jack type/Output level/Load impedance)
LINE OUT (AUDIO): Phono jack/2 Vrms/ 10 kilohms
5.1CH OUTPUT: Photo jack/2 Vrms/ 10 kilohms
DIGITAL OUT (OPTICAL): Optical output jack/–18 dBm (wave length 660 nm)
DIGITAL OUT (COAXIAL): Phono jack/ 0.5 Vp p/75 ohms
COMPONENT VIDEO OUT (Y, PB/CB, PB/CB): Phono jack/Y: 1.0 Vp p, PB/CB, PR/CR: 0.7 Vp p/75 ohms
LINE OUT (VIDEO): Phono jack/1.0 Vp p/ 75 ohms
S VIDEO OUT: 4-pin mini DIN/Y: 1.0 Vp p, C: 0.3 Vp p (PAL), 0.286 Vp p (NTSC)/75 ohms

General
Power requirements:
110 – 240 V AC, 50/60 Hz
Power consumption: 12 W
Dimensions (approx.):
(width/height/depth) incl. projecting parts
DVP-NS780V: 430 × 55.5 × 239 mm
DVP-LS785V: 430 × 55.5 × 245 mm
Mass (approx.):
DVP-NS780V: 2.0 kg
DVP-LS785V: 2.1 kg
Operating temperature: 5 °C to 35 °C
Operating humidity: 25 % to 80 %

Supplied accessories
See page 17.

Specifications and design are subject to change without notice.

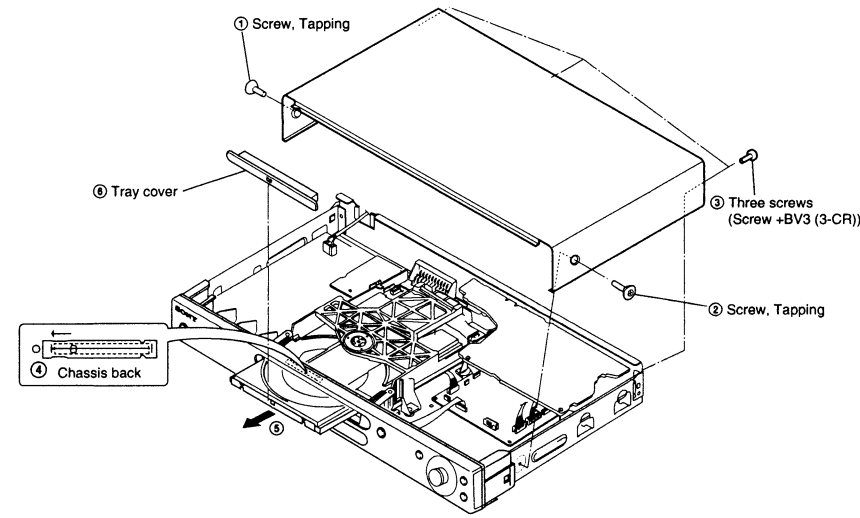
ENERGY STAR® is a U.S. registered mark. As an ENERGY STAR® Partner, Sony Corporation has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

MEMO

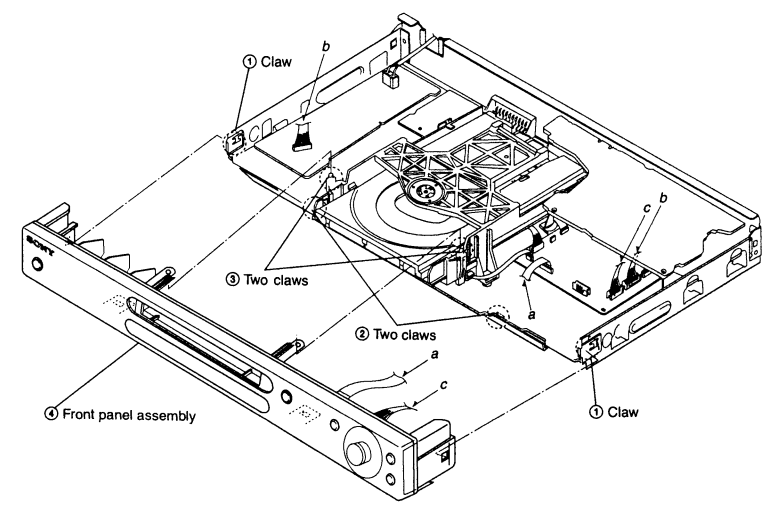
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

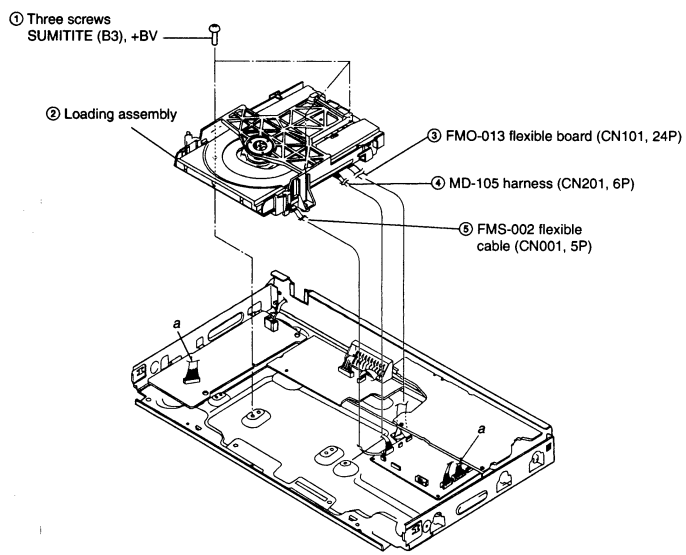
2-1. UPPER CASE



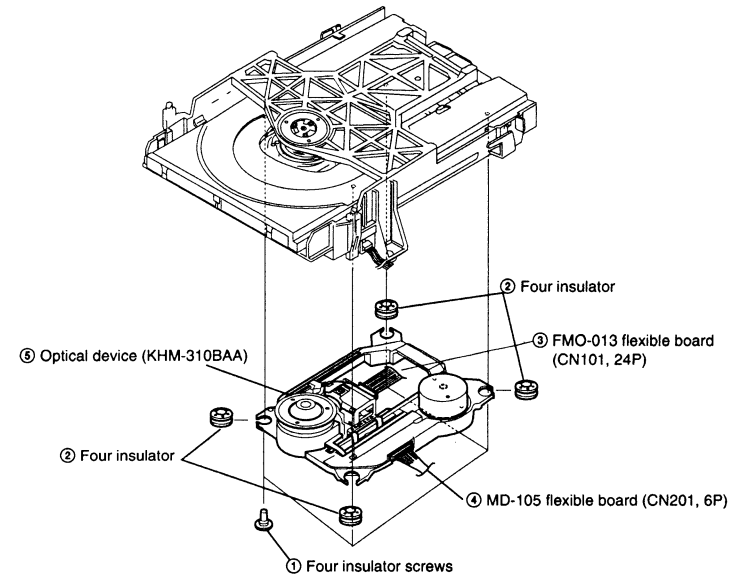
2-2. FRONT PANEL ASSEMBLY



2-3. LOADING ASSEMBLY



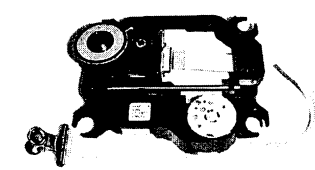
2-4. OPTICAL DEVICE (KHM-310BAA)


② Four insulator
③ FMO-013 flexible board (CN101, 24P)
⑤ Optical device (KHM-310BAA)
② Four insulator
④ MD-105 flexible board (CN201, 6P)
① Four insulator screws

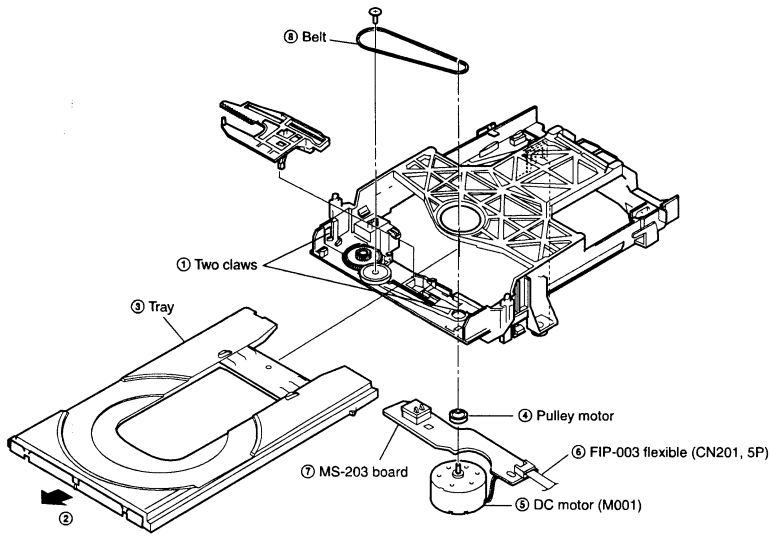
Caution Point on the Laser Diode:

Laser Diode in the optical Device is very sensitive to Surge Current or ElectroStatic Discharge (ESD):

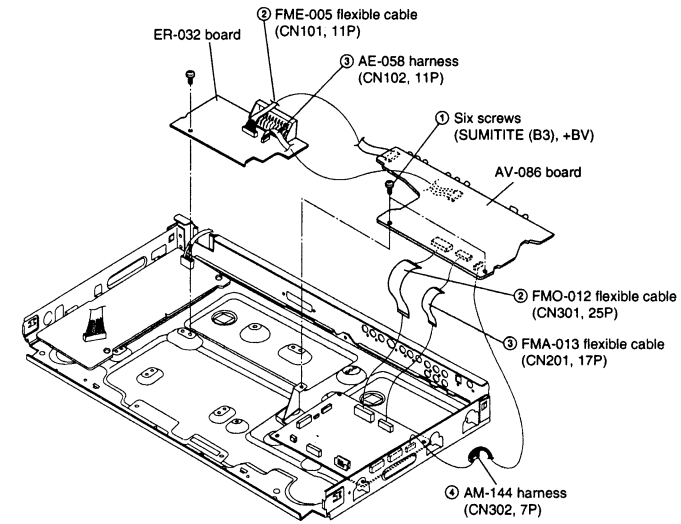
After take-out FMO-013 Flexible cable from CN101 of MB-117 board immediately ground FMO-013 Flexible cable pattern using short clip. Metal paper clip can be used as short clip.

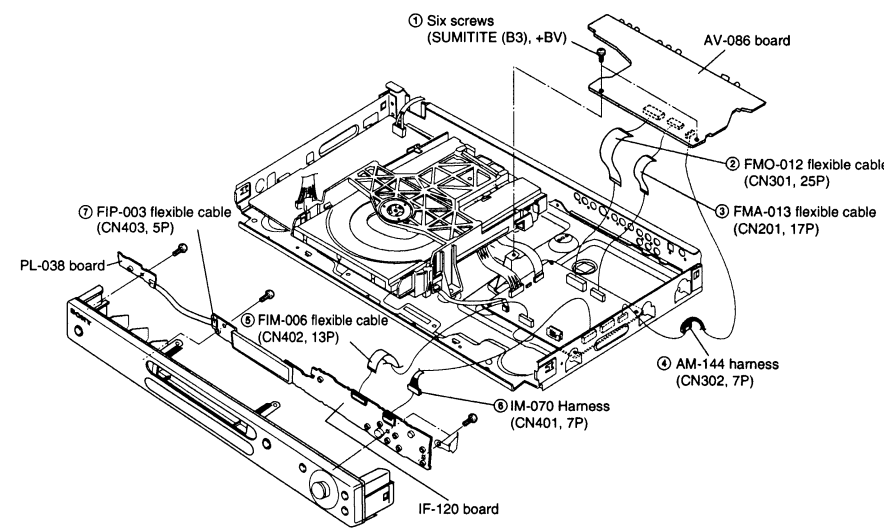


2-5. DC MOTOR and MS-203 BOARD

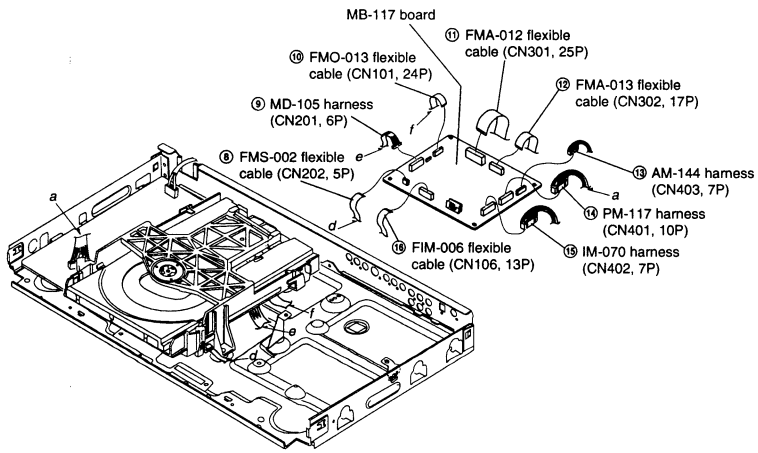


2-6. AV-086, ER-032, IF-120 and PL-038 BOARDS

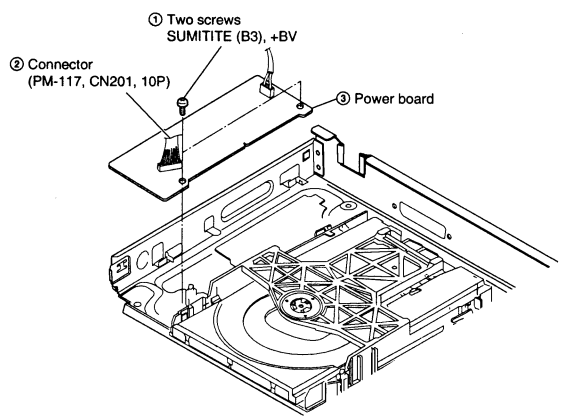




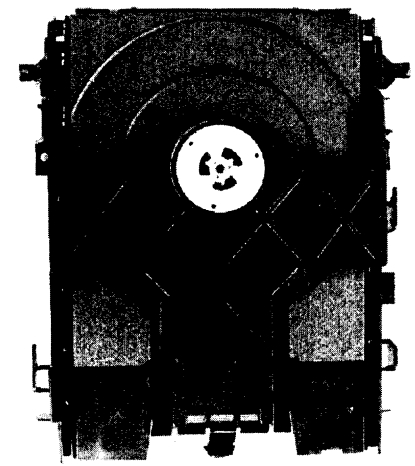
2-7. MB-117 BOARD



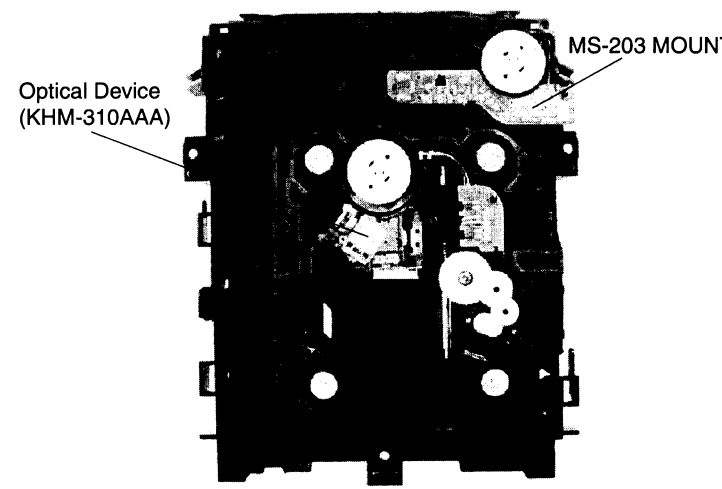
2-8. SWITCHING REGULATOR



2-9. INTERNAL VIEWS

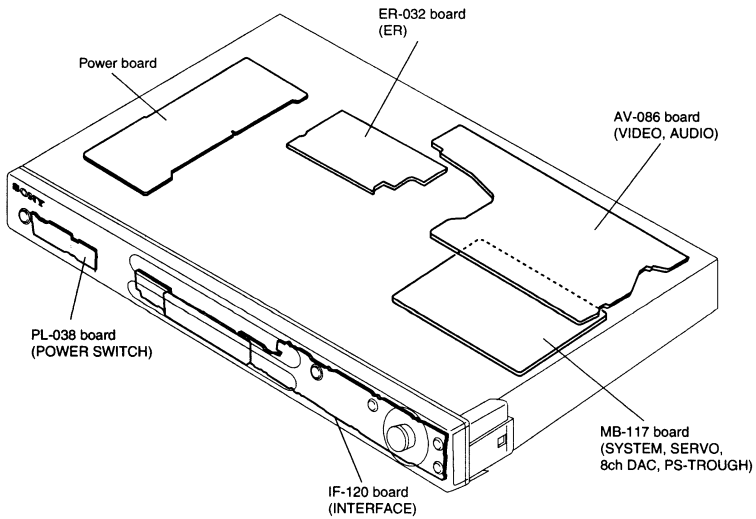


TOP VIEW



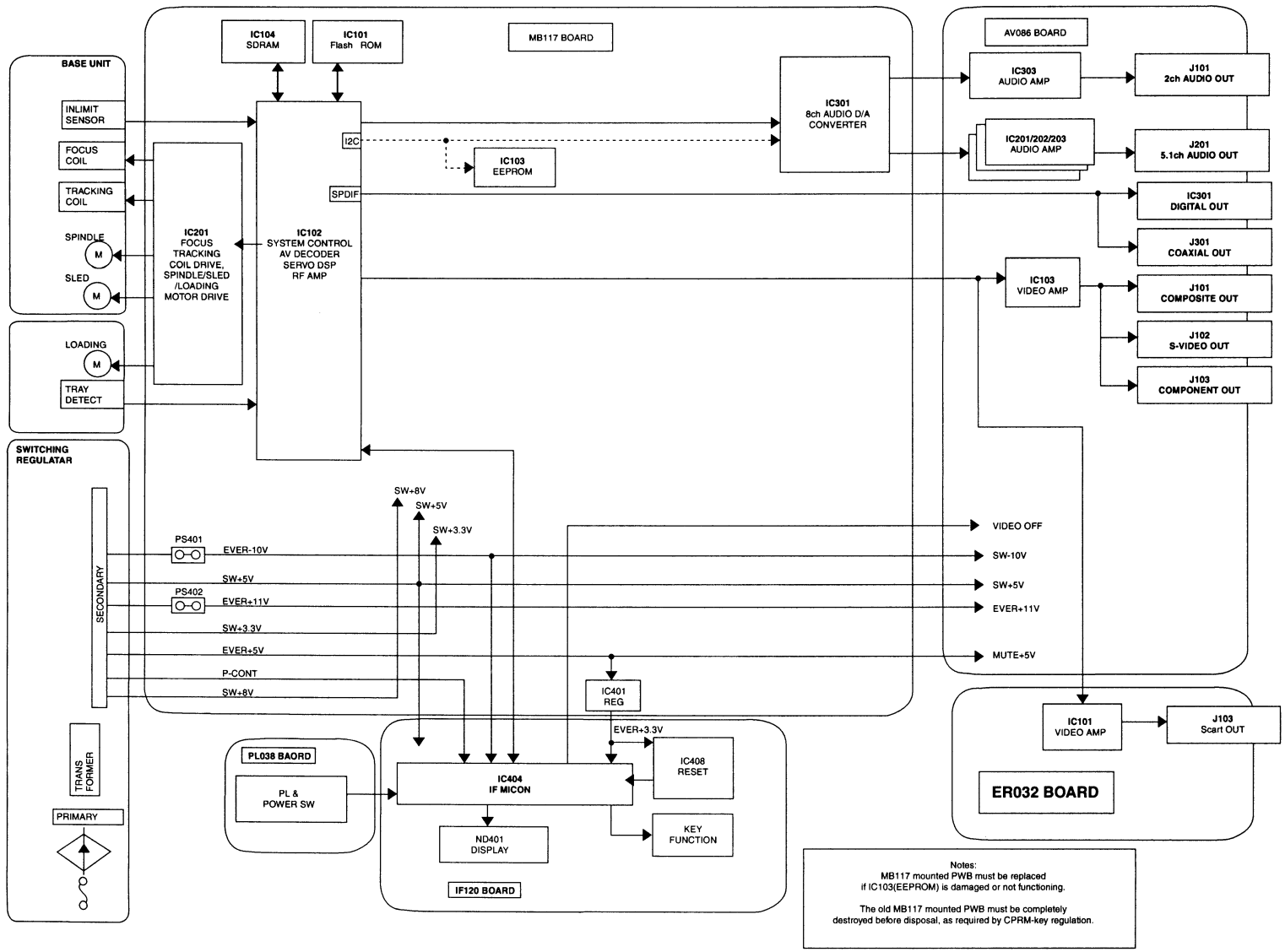
BOTTOM VIEW

2-10. CIRCUIT BOARDS LOCATION

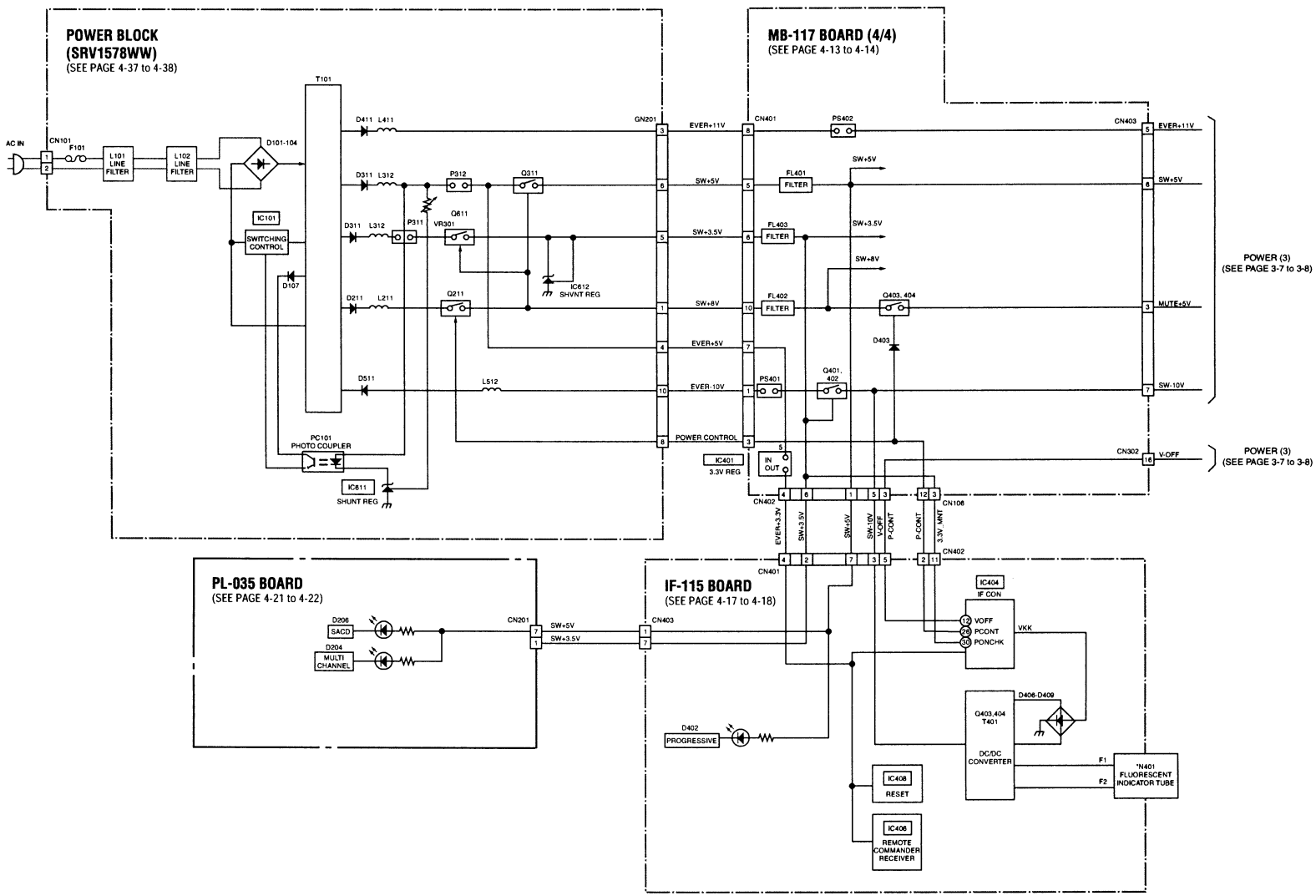


SECTION 3
BLOCK DIAGRAMS

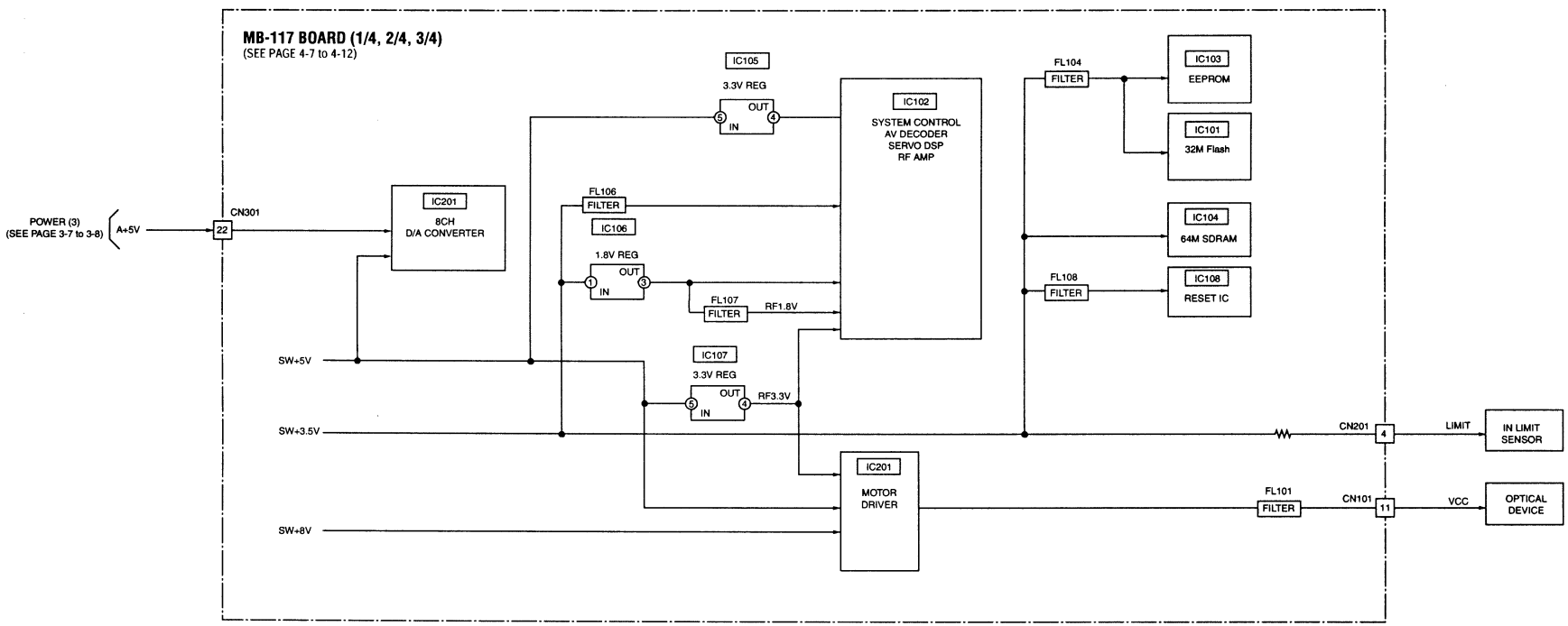
3-1. OVERALL BLOCK DIAGRAM



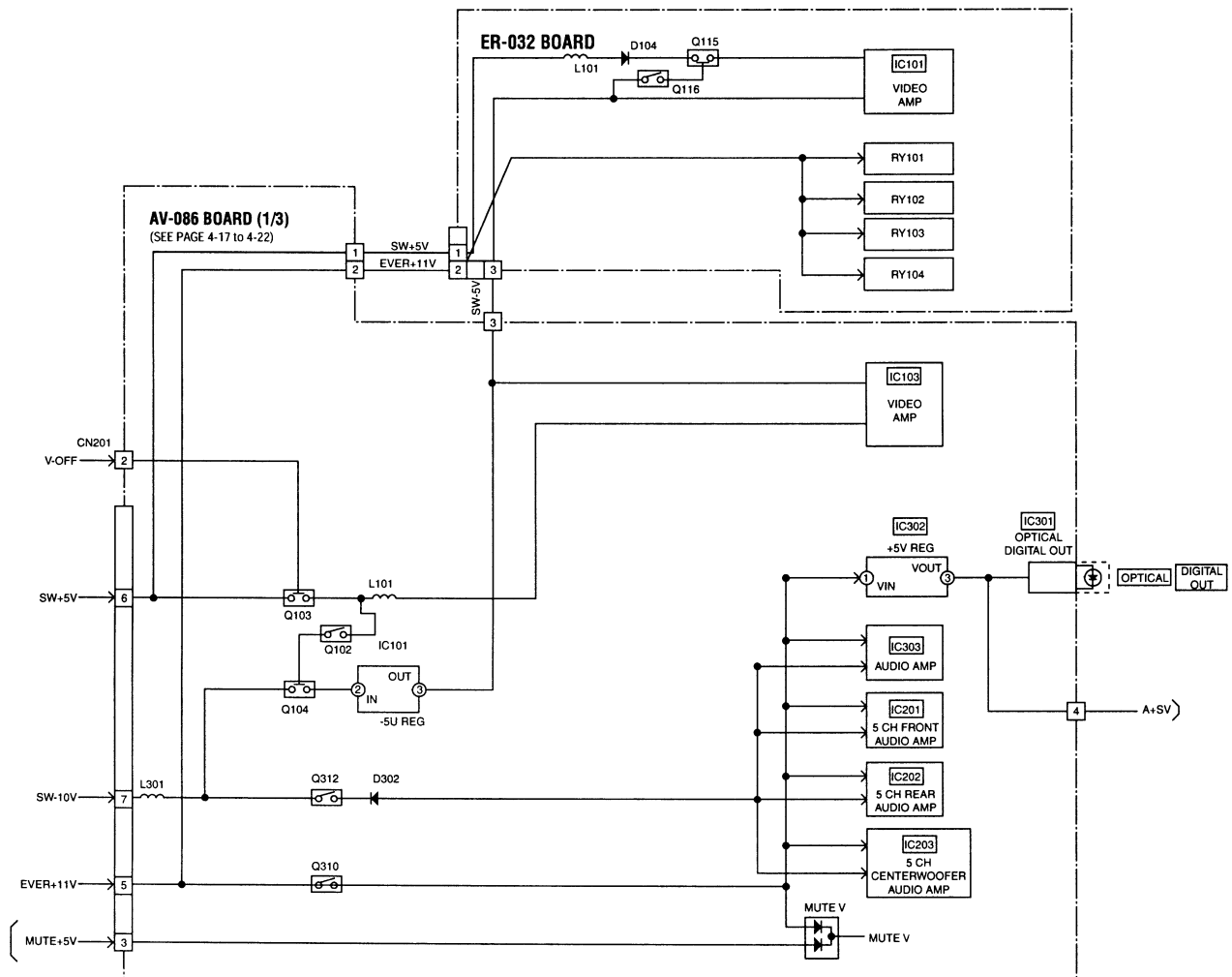
3-2. POWER (1) BLOCK DIAGRAM



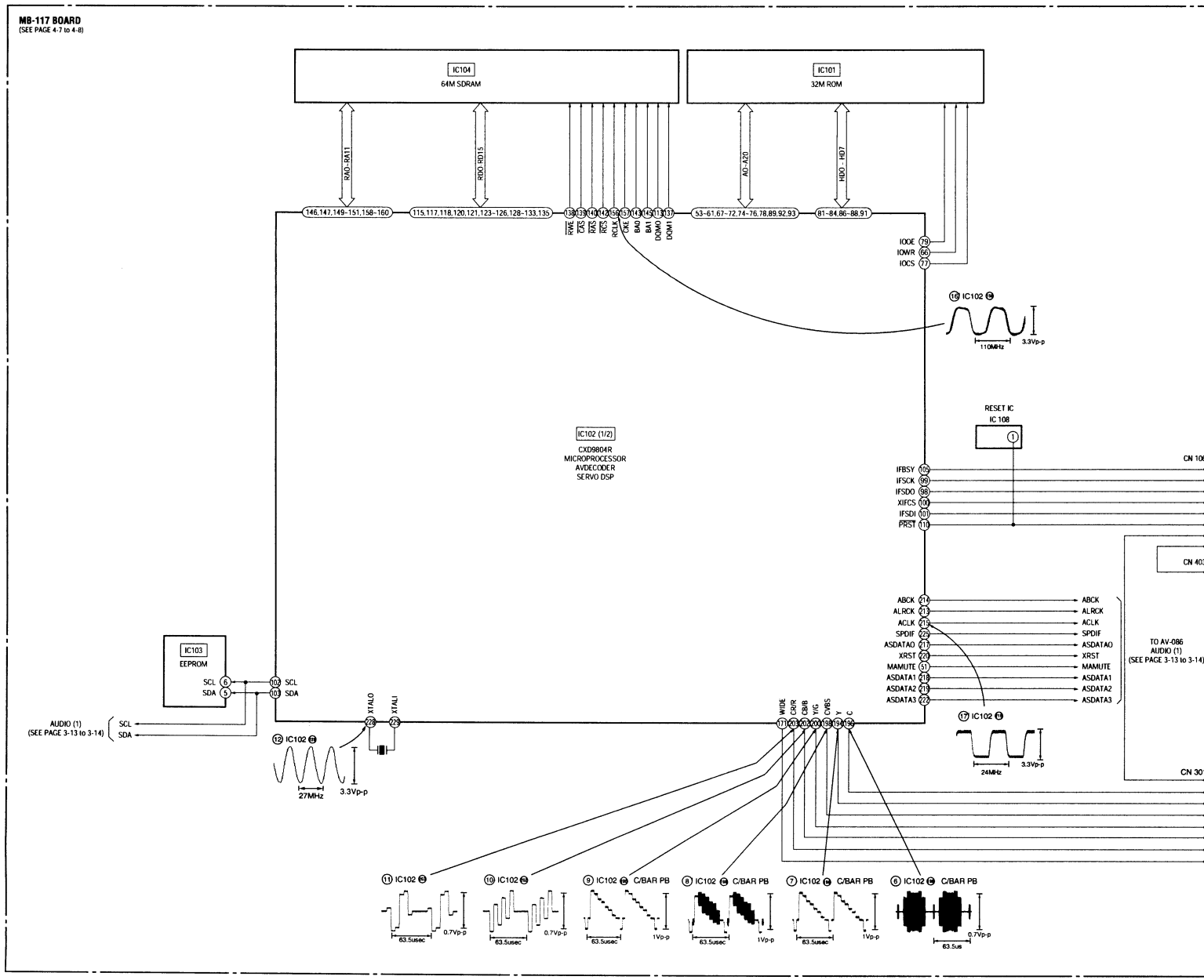
3-3. POWER (2) BLOCK DIAGRAM



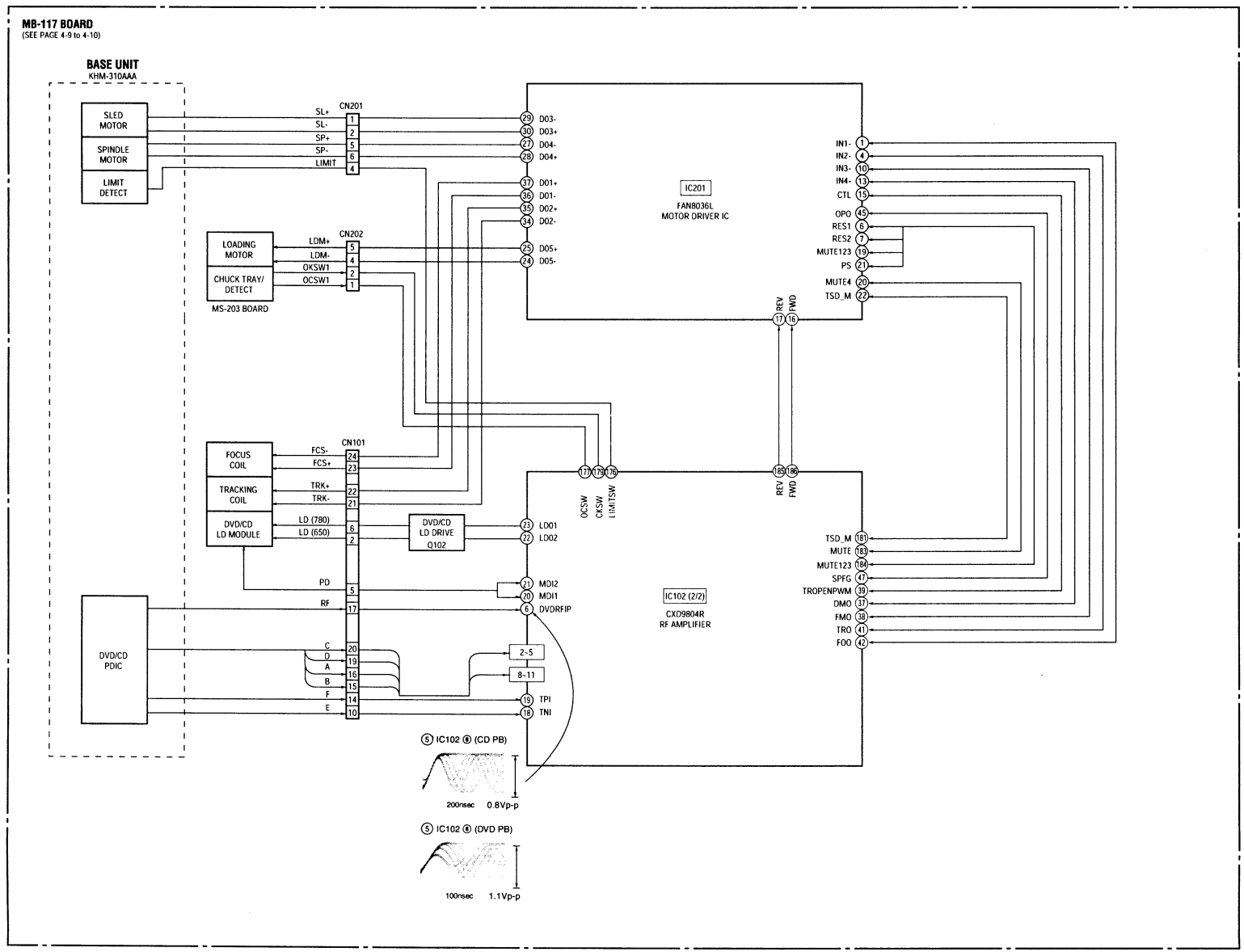
3-4. POWER (3) BLOCK DIAGRAM



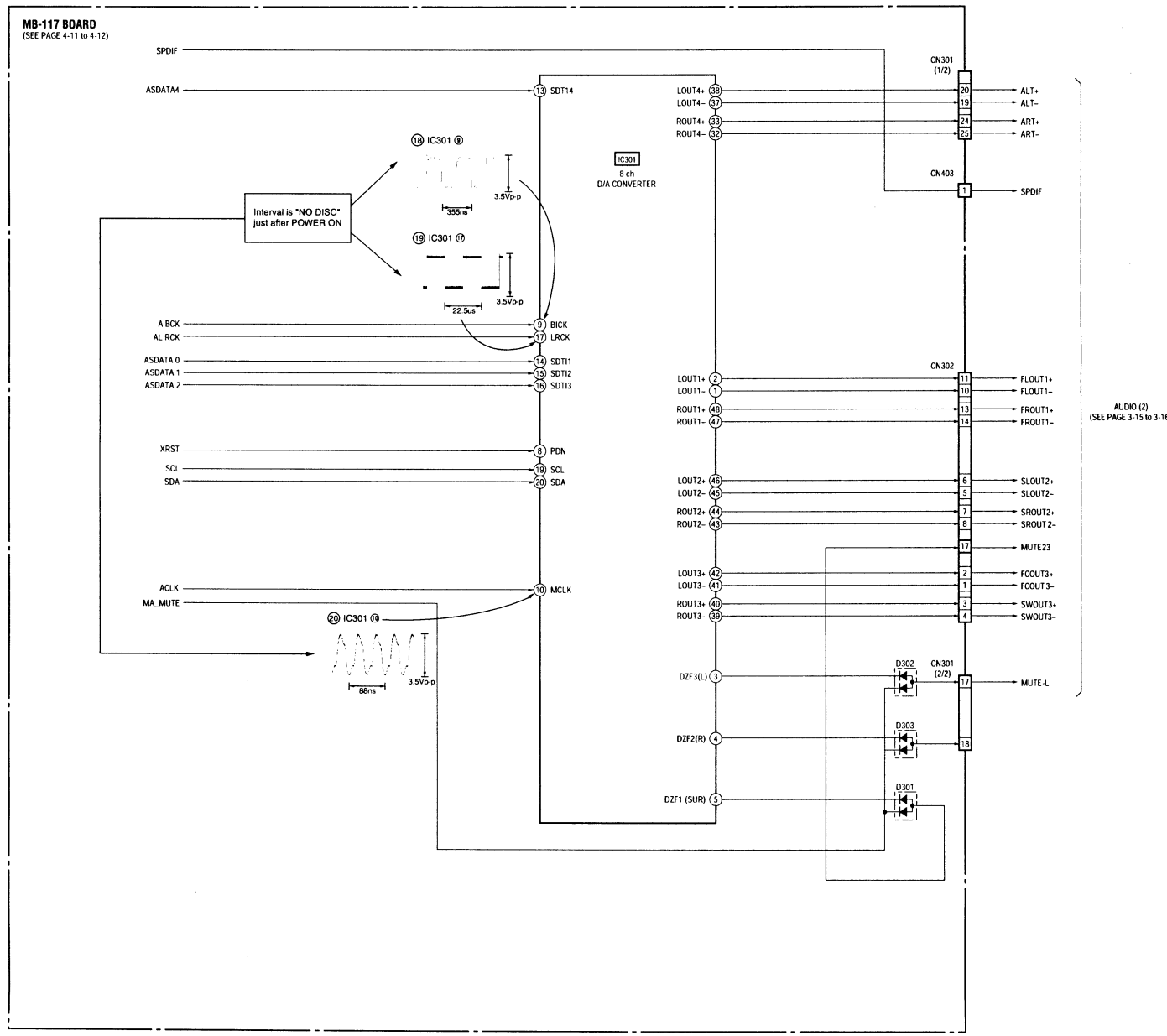
3-5. SYSTEM CONTROL/SIGNAL PROCESSOR BLOCK DIAGRAM



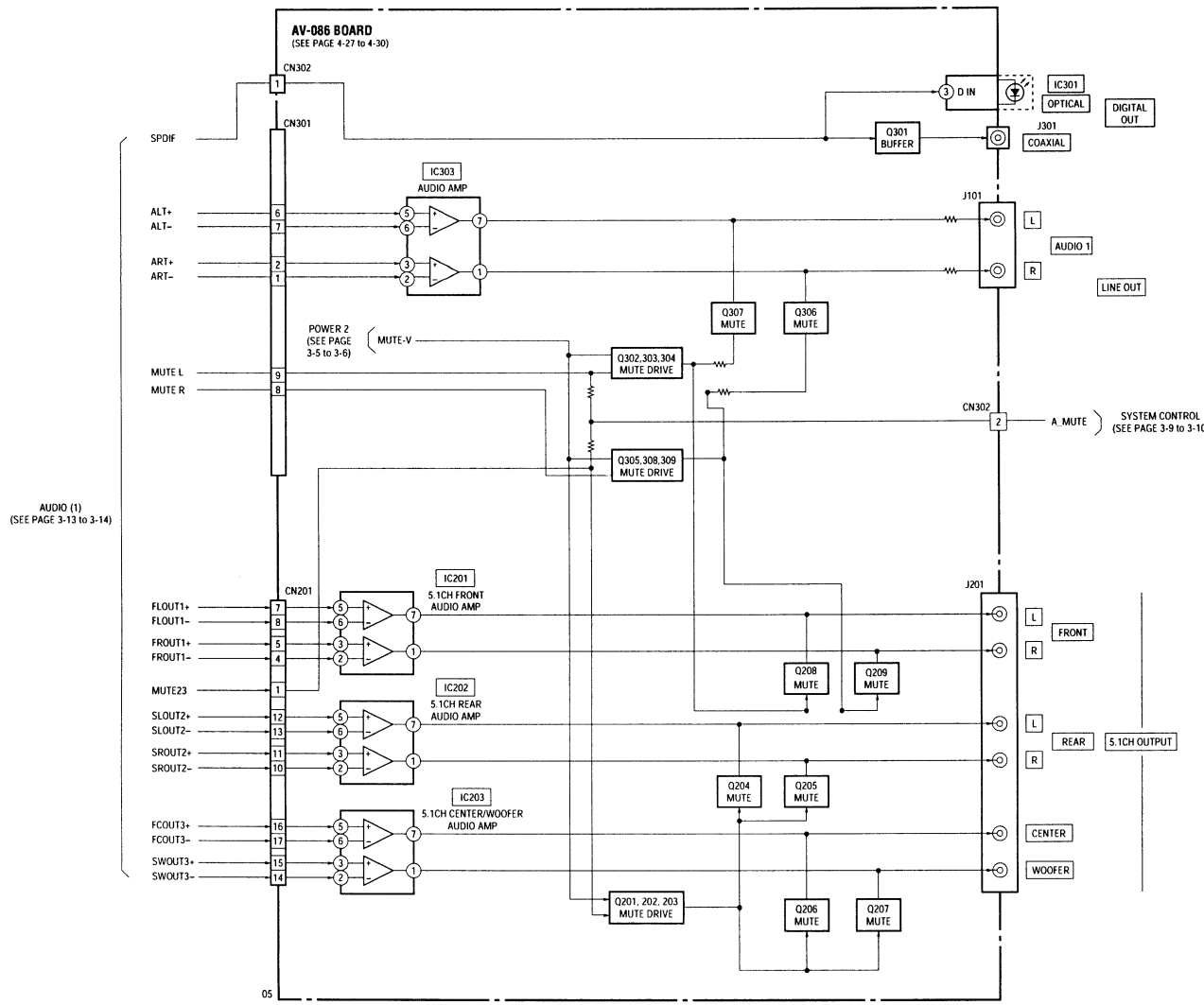
3-6. RF/SERVO BLOCK DIAGRAM



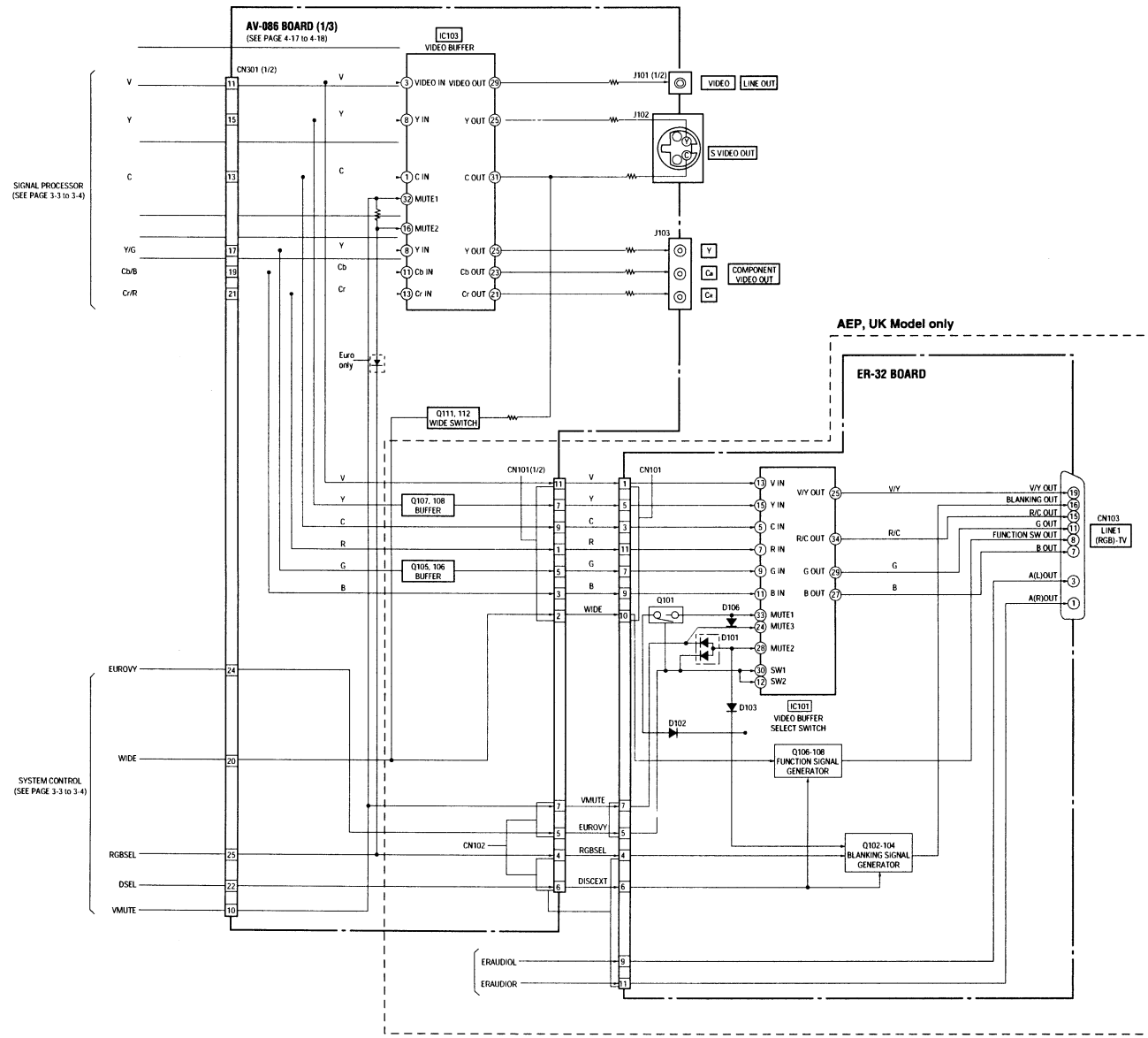
3-7. AUDIO (1) BLOCK DIAGRAM



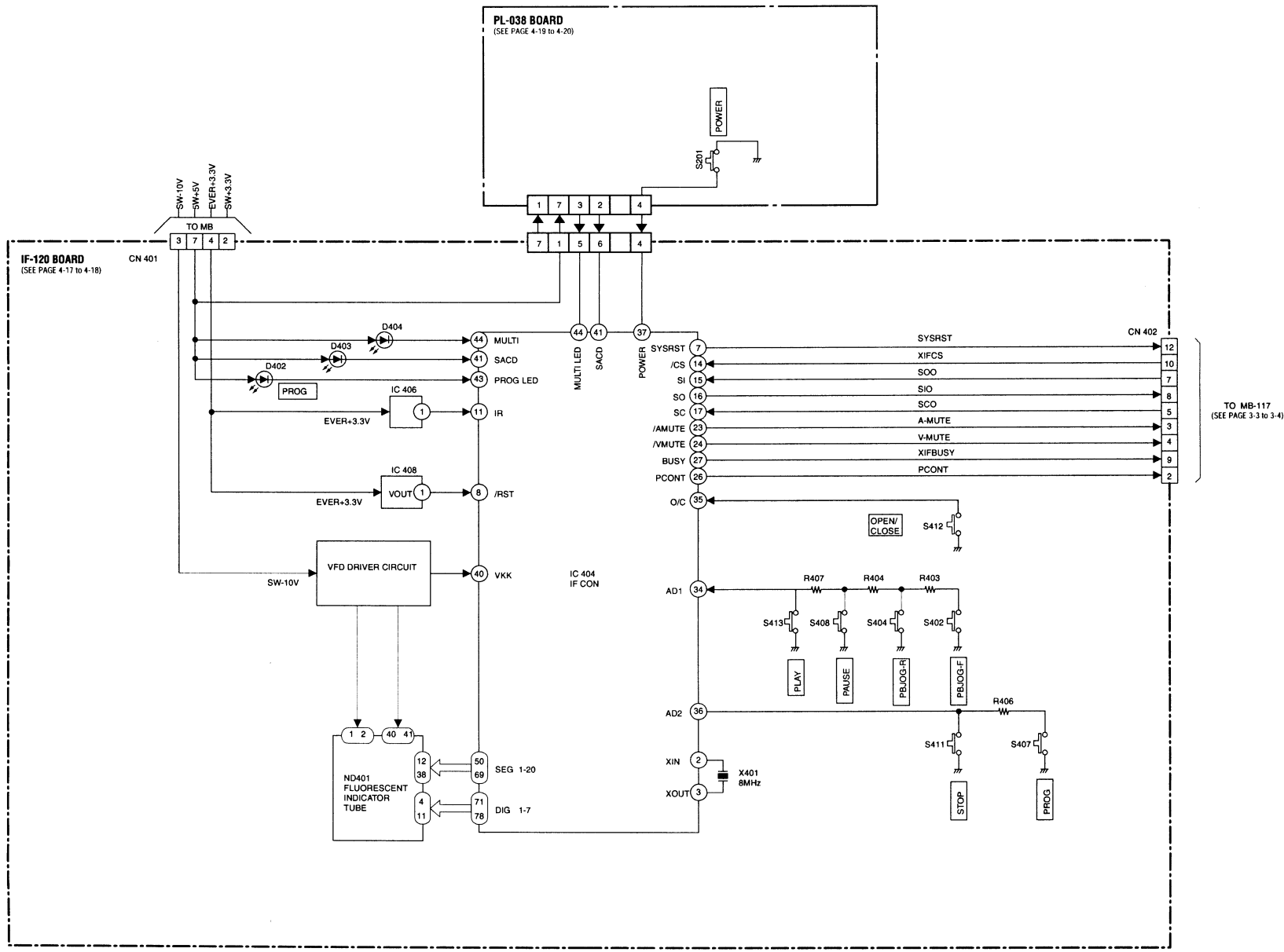
3-8. AUDIO (2) BLOCK DIAGRAM



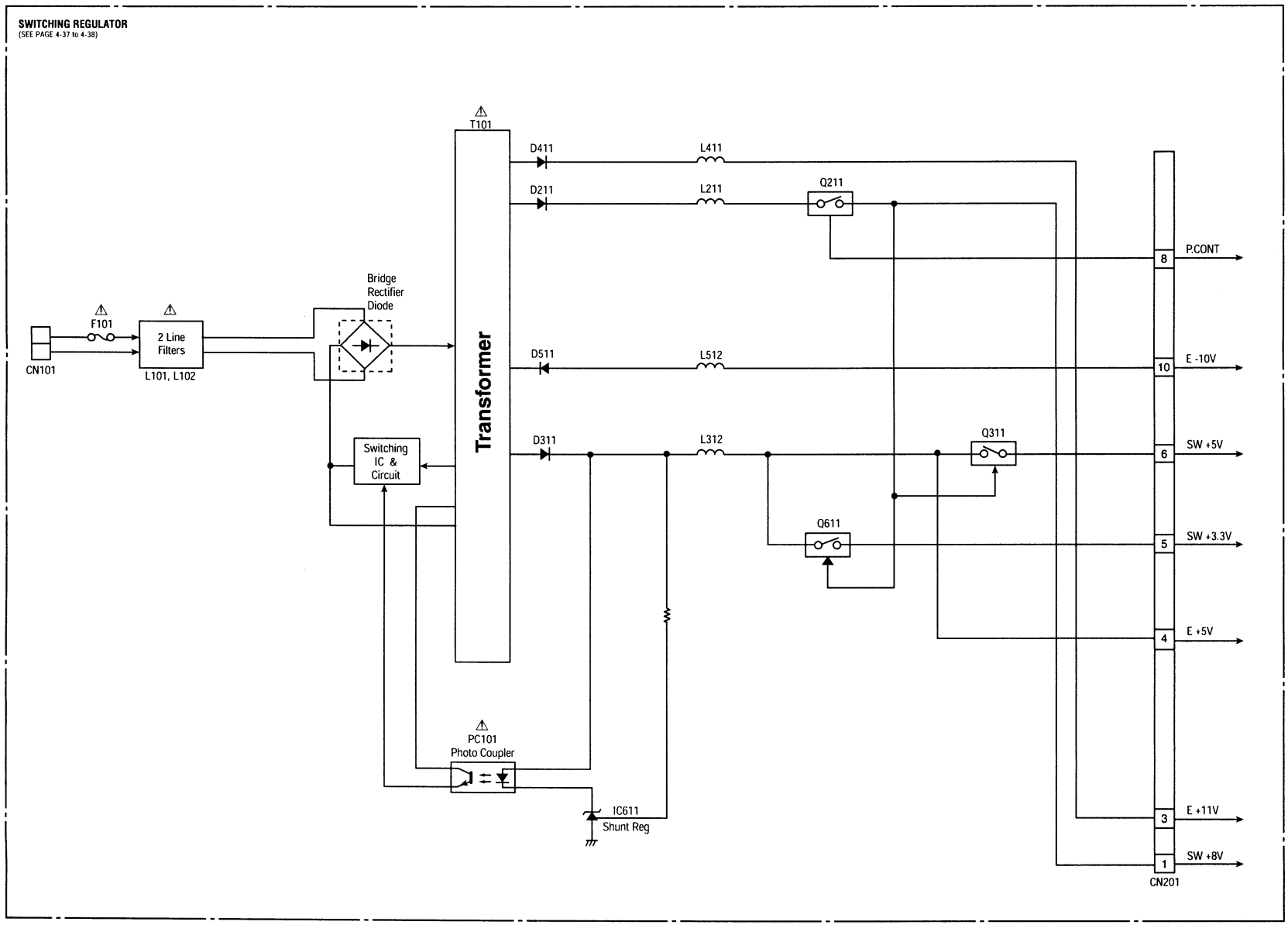
3-9. VIDEO BLOCK DIAGRAM



3-10. INTERFACE CONTROL BLOCK DIAGRAM

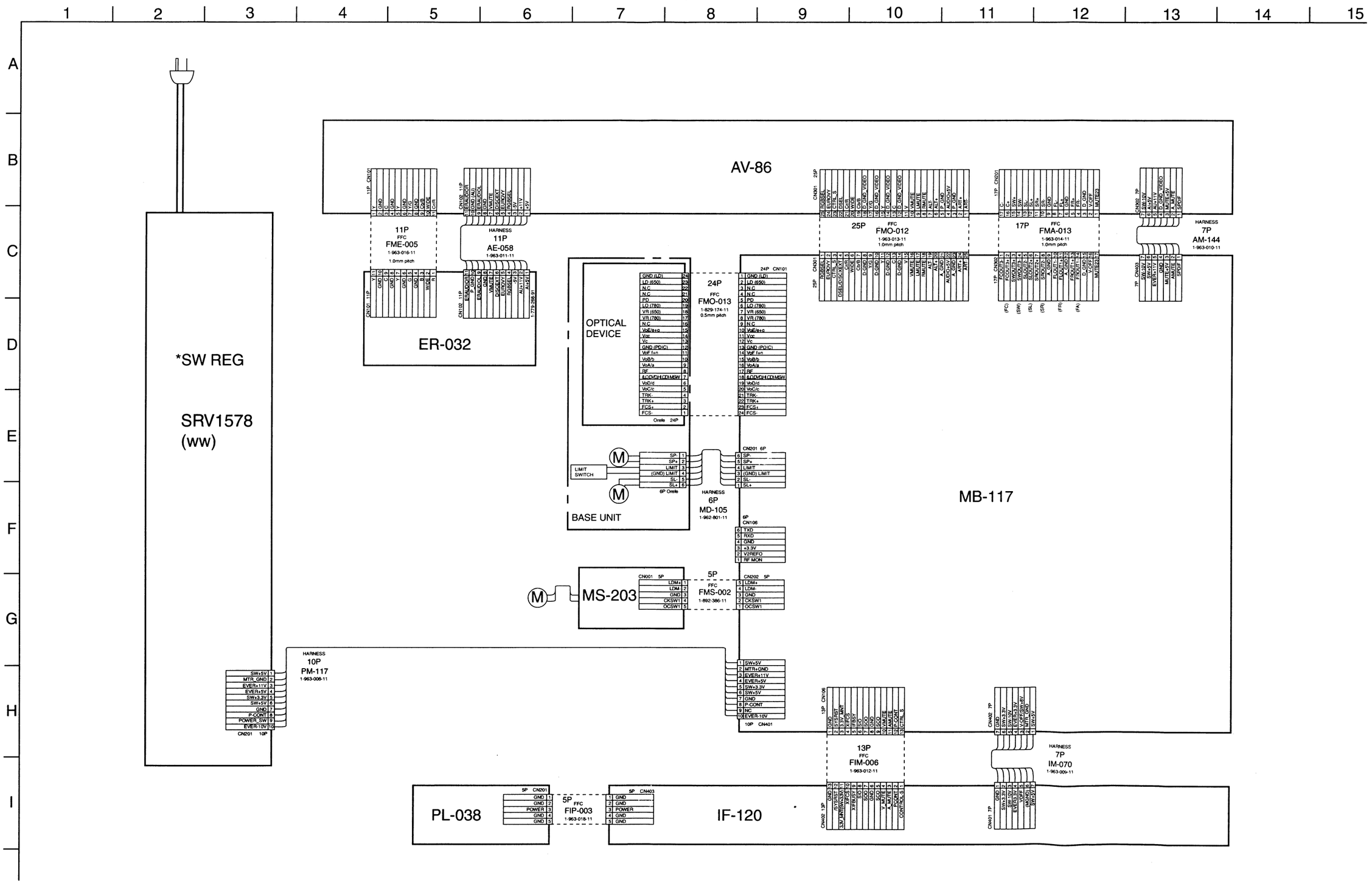


3-11. POWER BLOCK DIAGRAM



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block)

For printed wiring boards:

- o— : indicates a lead wire mounted on the component side.
- •— : indicates a lead wire mounted on the printed side.
- ○ : Through hole.
- ▭ : Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Side A)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side B)	Parts on the parts face side seen from the parts face are indicated.

- Abbreviation
  ME: Middle East Model

  E

For schematic diagrams:

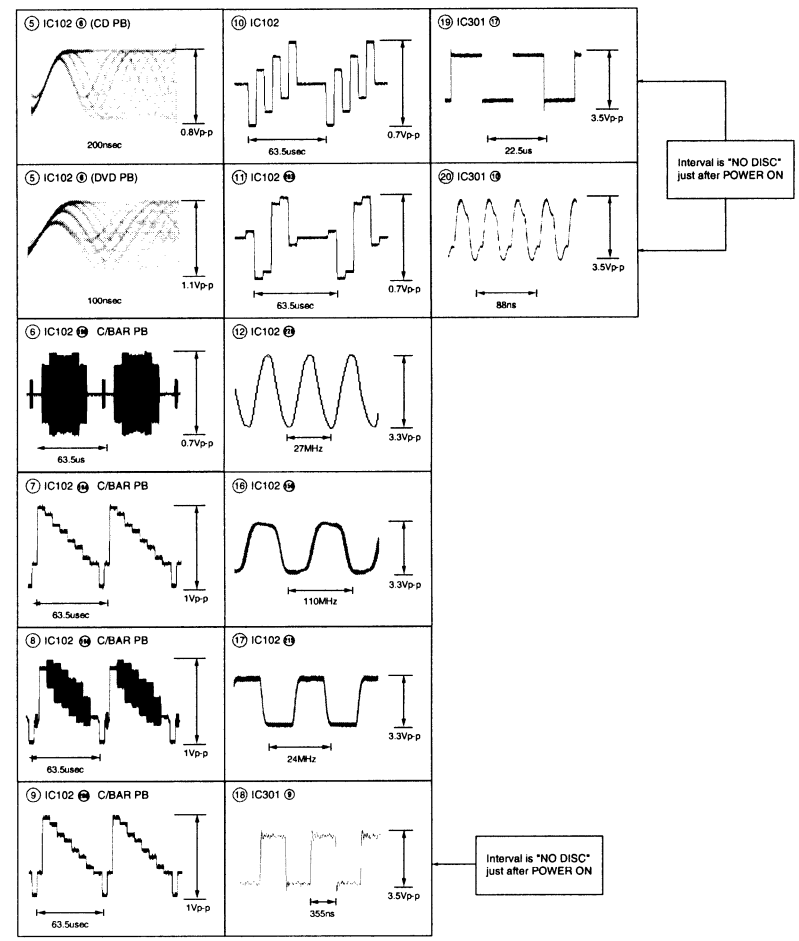
- All capacitors are in μF unless otherwise noted. pF : μμF. 50V or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W (Chip resistors : 1/10W) un-less otherwise specified.
  kΩ = 1000Ω, MΩ = 1000kΩ.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : non flammable resistor.
- : fusible resistor.
- : panel designation.
- △ : internal component.
- : adjustment for repair.
- B+ : B+ Line.
- B− : B− Line.
- Circled numbers refer to waveforms.
- Voltages are dc between measurement point.
- Readings are taken with a color-bar signal on DVD reference disc and when playing CD reference disc.
- Readings are taken with a digital multimeter (DC 10MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

4-3. WAVEFORM

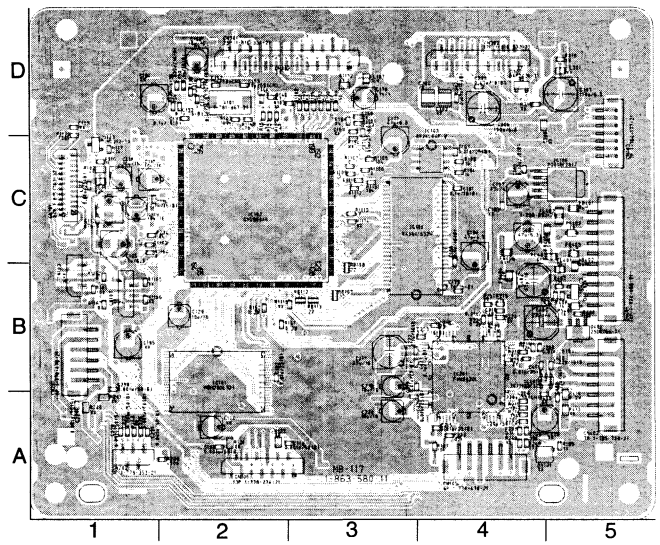
MB-117 BOARD



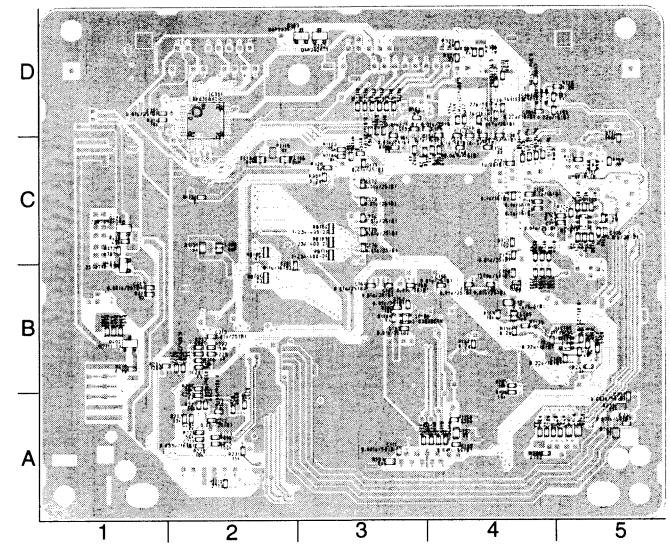
MB-117 (SYSTEM, SERVO, 8ch DAC, PS-TROUGH) PRINTED WIRING BOARD

• 4F : Uses unleaded solder.

MB-117 BOARD SIDE A



MB-117 BOARD SIDE B



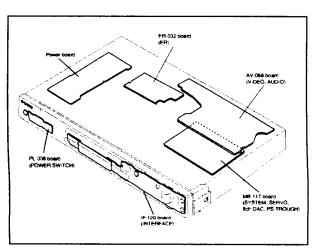
MB-117 BOARD

A SIDE

IC101	B-2
IC102	C-2
IC103	D-4
IC104	C-3
IC106	C-5
IC201	B-4
IC401	B-4
Q103	C-1
Q401	B-5
D301	D-4
D403	B-5

B SIDE

IC105	B-5
IC107	D-4
IC108	B-3
IC301	D-2
Q101	C-5
Q102	C-5
Q402	B-1
Q403	C-1
Q404	C-1
D302	D-2
D303	D-3



For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

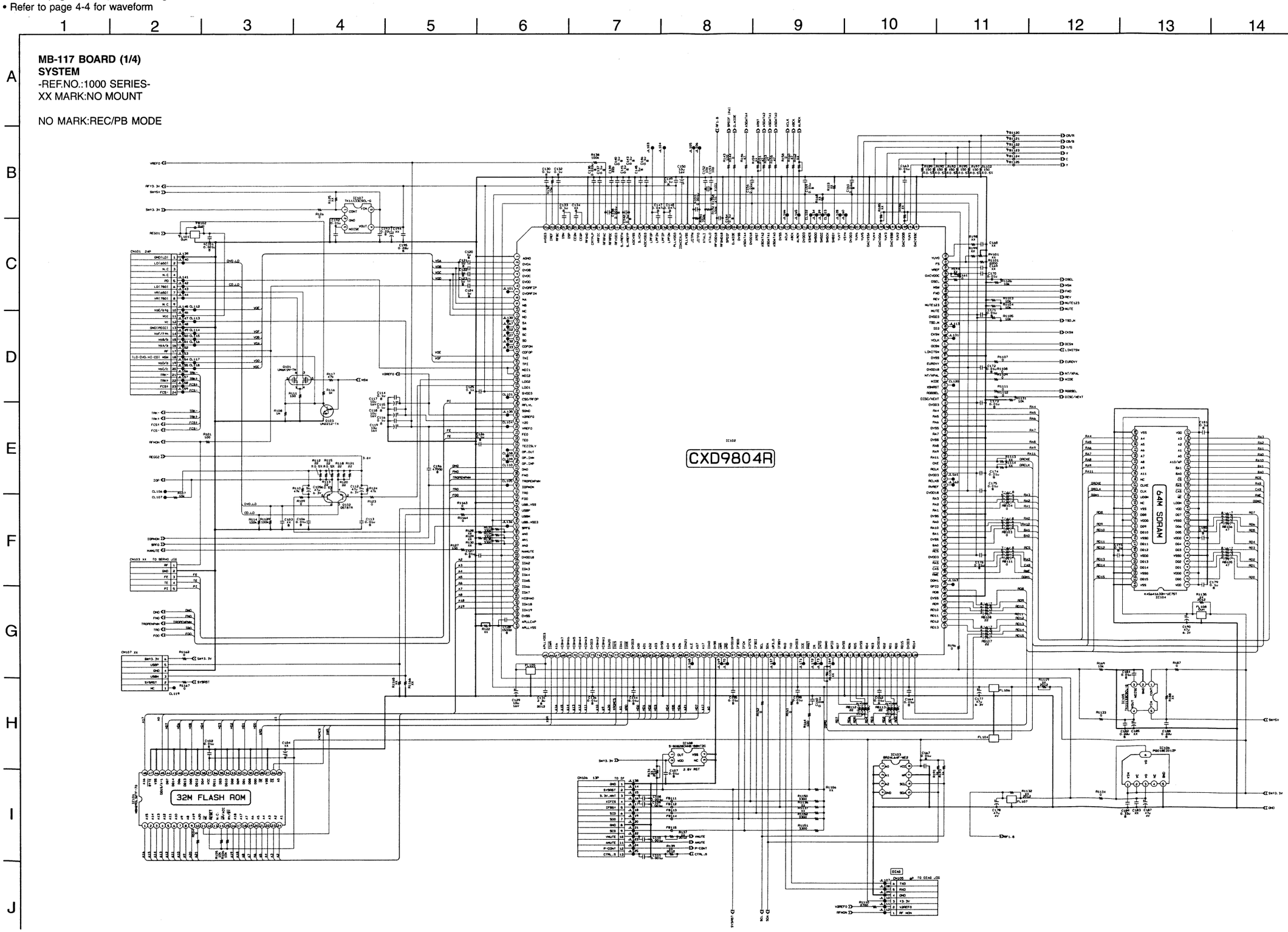
DVP-LS785V

For Schematic Diagram

- Refer to page 4-5 for printed wiring board of MB-117 board.
- Refer to page 4-4 for waveform

MB-117 BOARD (1/4)
SYSTEM
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE



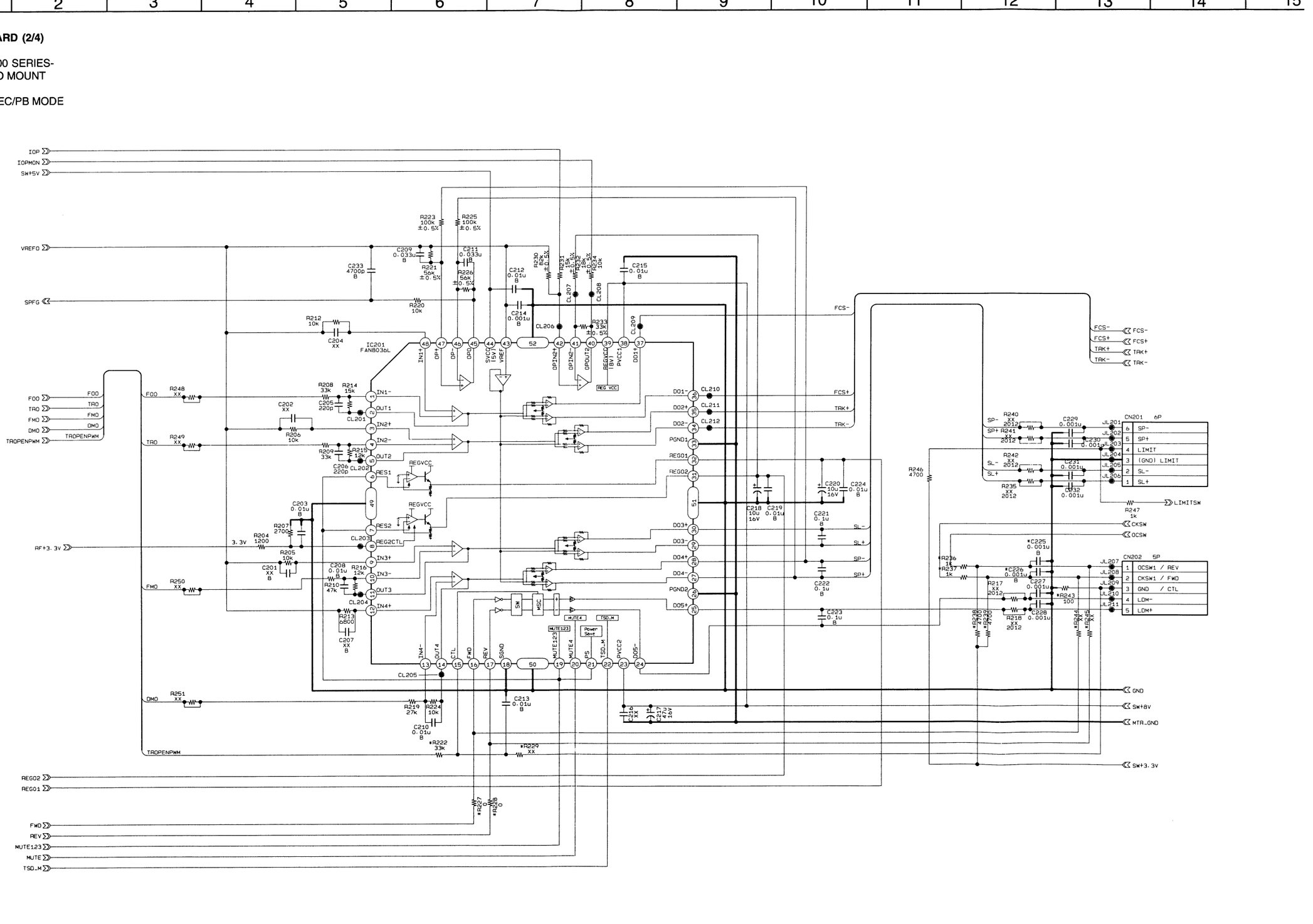
SYSTEM
MB-117 (1/4)

For Schematic Diagram

- Refer to page 4-5 for printed wiring board of MB-117 board.
- Refer to page 4-4 for waveform

MB-117 BOARD (2/4)
SERVO
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE



SERVO
MB-117 (2/4)

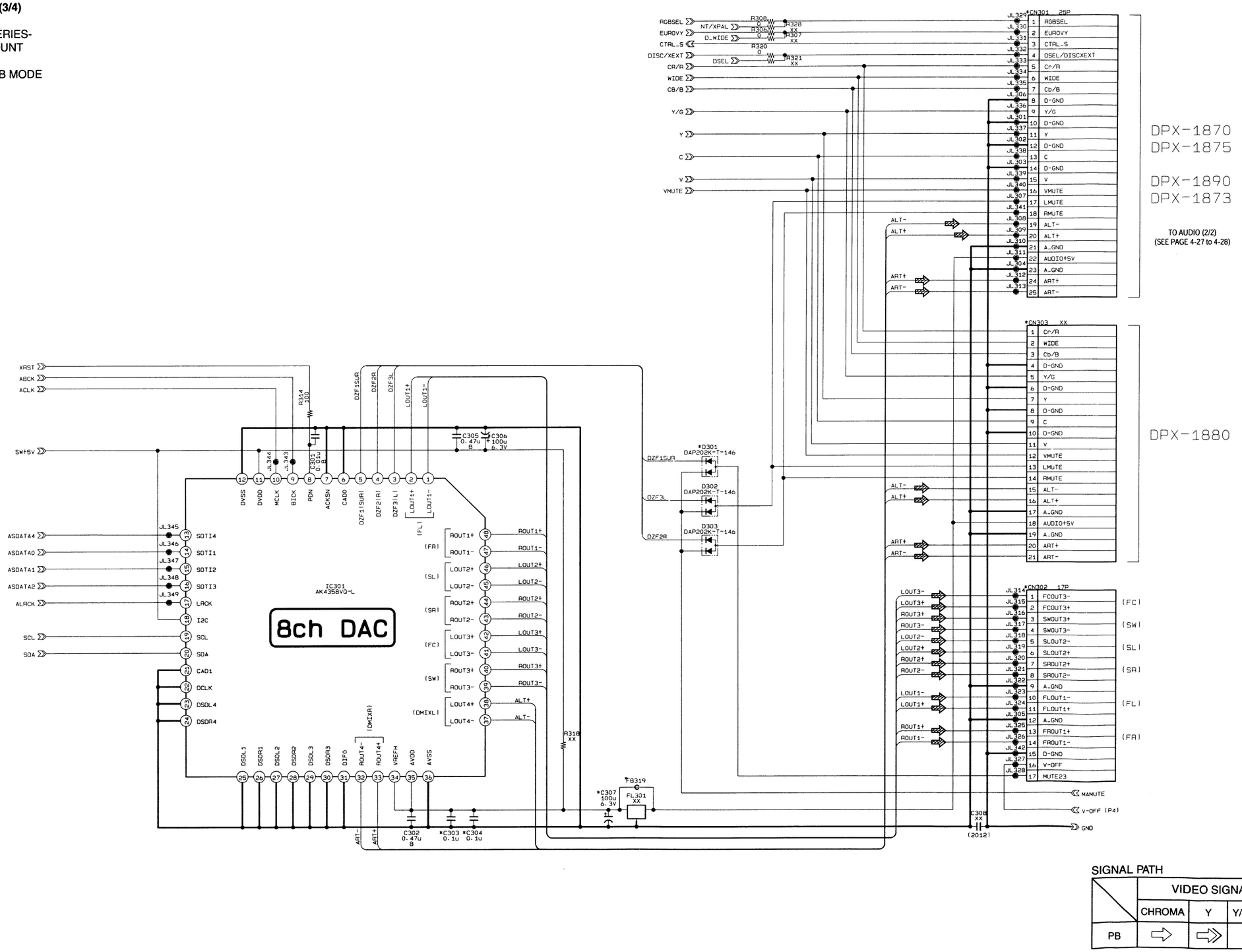
DVP-LS785V

For Schematic Diagram

- Refer to page 4-5 for printed wiring board of MB-117 board.
- Refer to page 4-4 for waveform

MB-117 BOARD (3/4)
8ch DAC
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE



SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	⇨

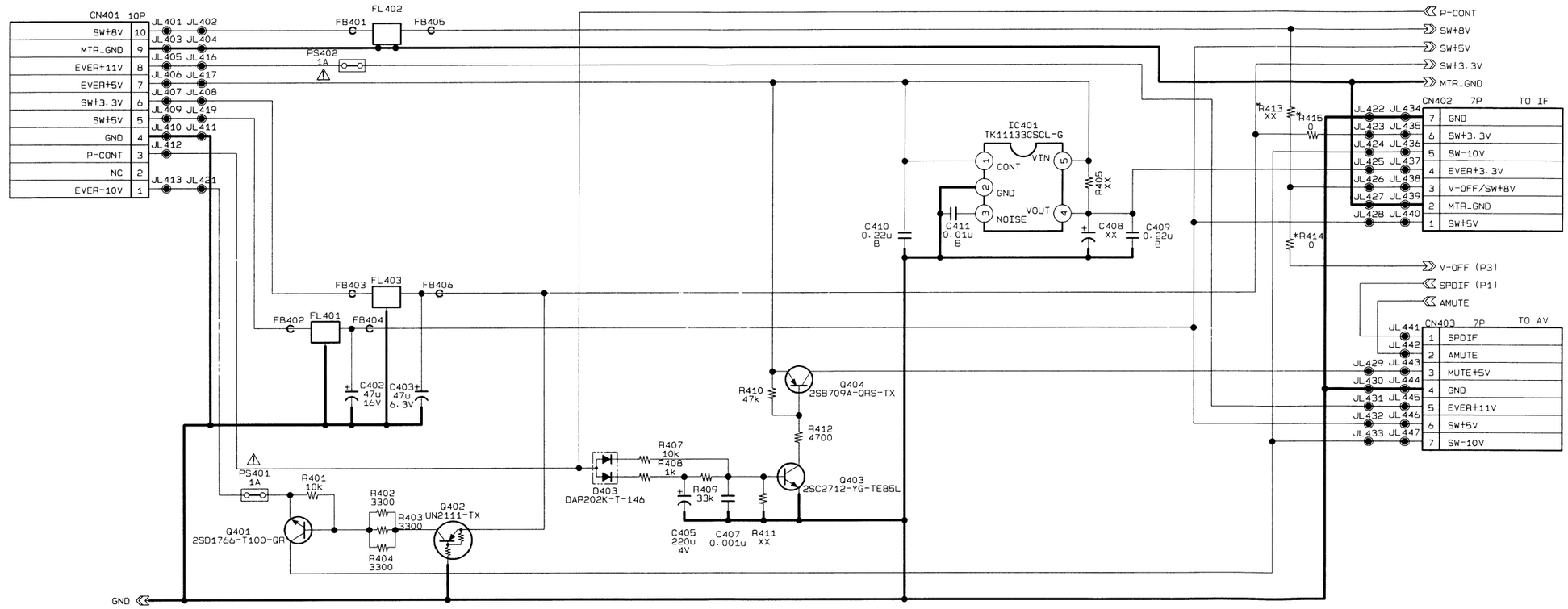
8ch DAC
MB-117 (3/4)

For Schematic Diagram

- Refer to page 4-5 for printed wiring board of MB-117 board.
- Refer to page 4-4 for waveform

MB-117 BOARD (4/4)
PS-TROUGH
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE



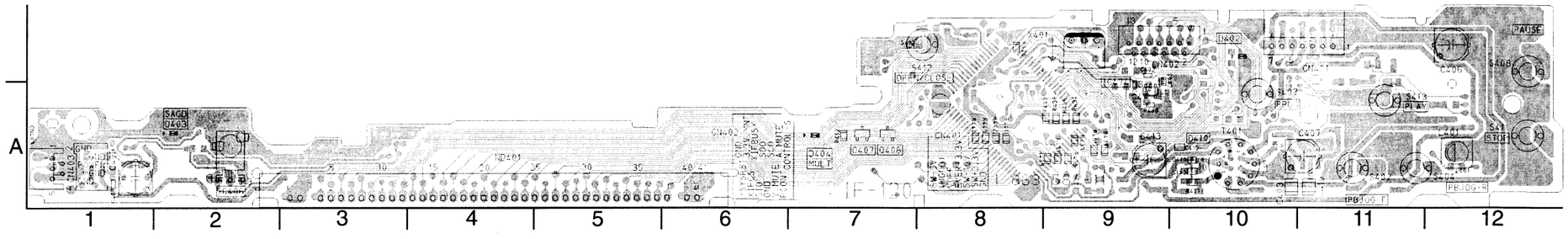
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

PS-TROUGH
MB-117 (4/4)

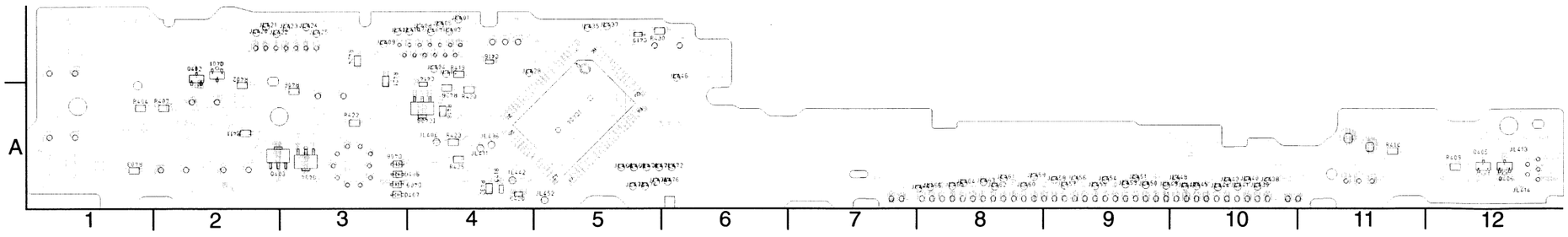
IF-120 (INTERFACE) PRINTED WIRING BOARD

• : Uses unleaded solder.

IF-120 BOARD A SIDE



IF-120 BOARD B SIDE



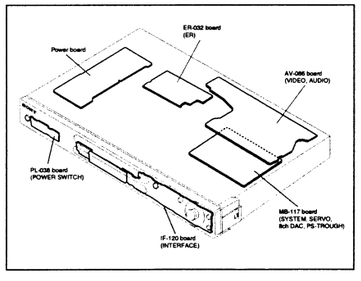
IF-120 BOARD

A SIDE

IC406	A-2
IC474	A-9
D402	B-10
D403	A-2
D404	A-7
D4010	A-10
Q407	A-7
Q408	A-7

B SIDE

IC404	A-5
IC408	A-4
Q401	B-2
Q402	B-2
Q403	A-2
Q404	A-3
Q405	A-12
Q406	A-12
D406	A-4
D407	A-4
D408	A-3
D409	A-4

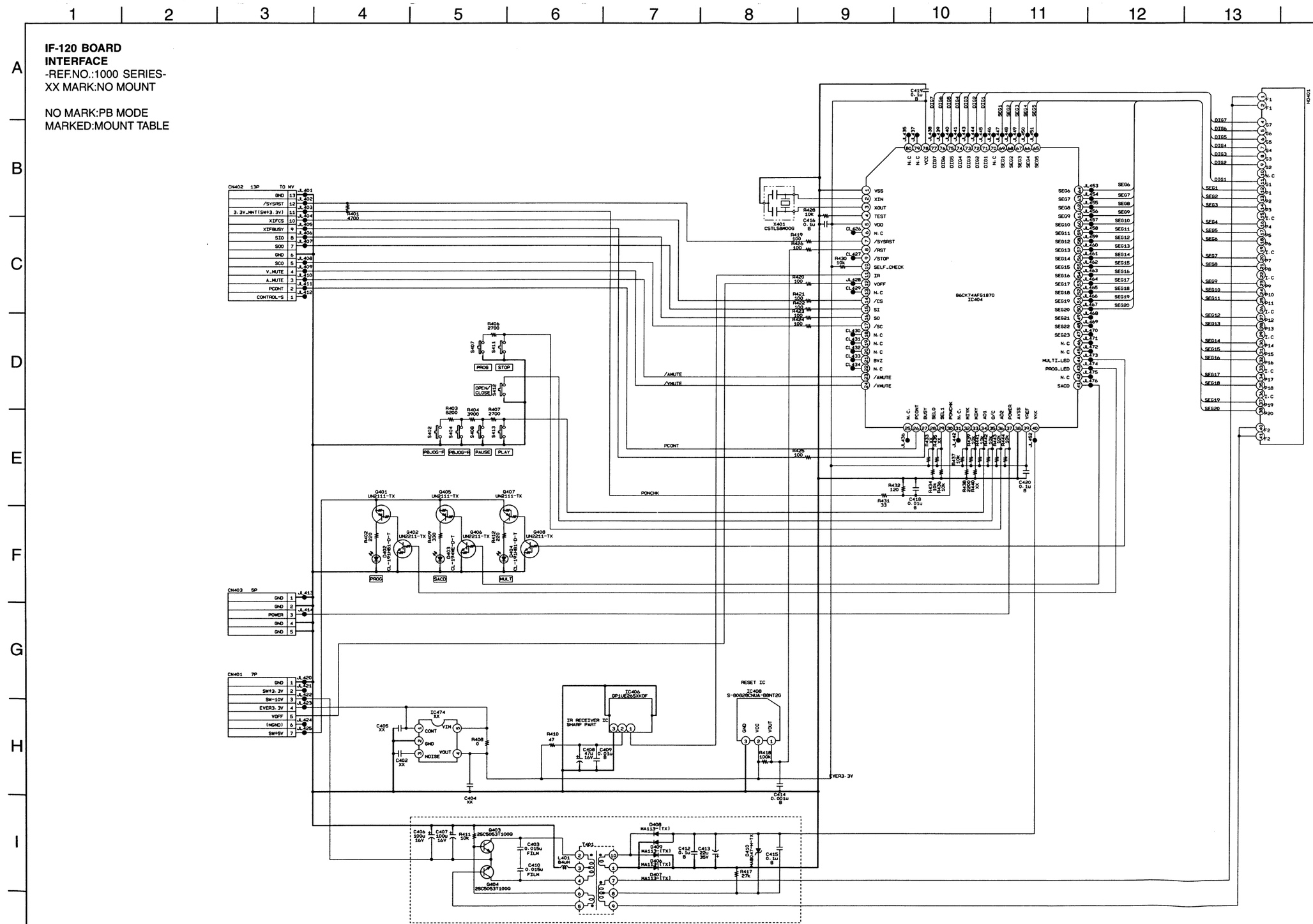


For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

For Schematic Diagram

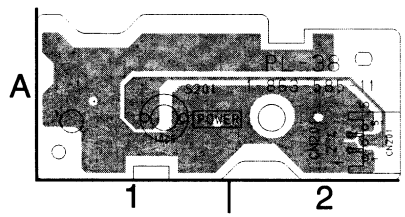
• Refer to page 4-15 for printed wiring board of IF-120 board.



PL-038 (POWER SWITCH) PRINTED WIRING BOARD

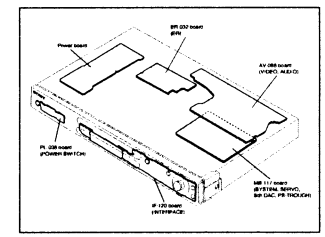
• 4F : Uses unleaded solder.

PL-038 BOARD A SIDE



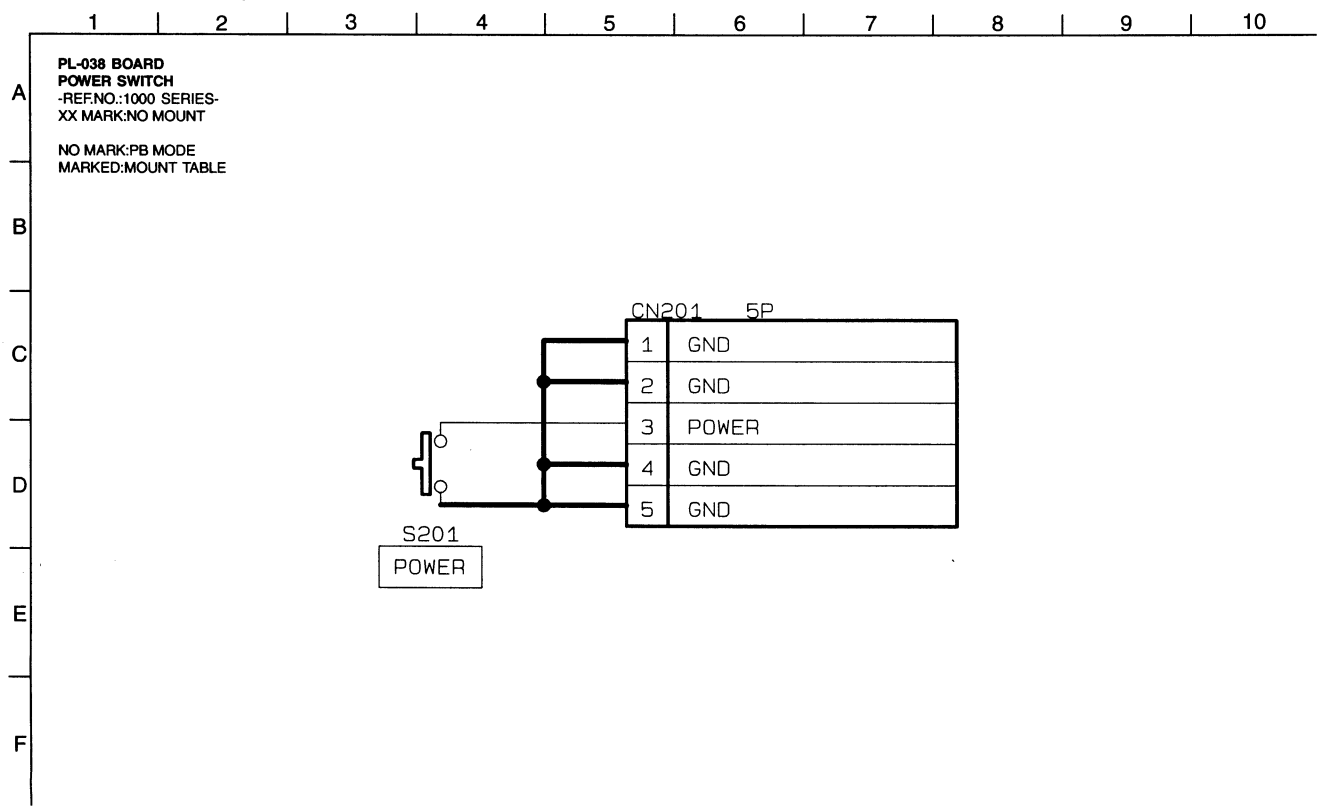
For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.



For Schematic Diagram

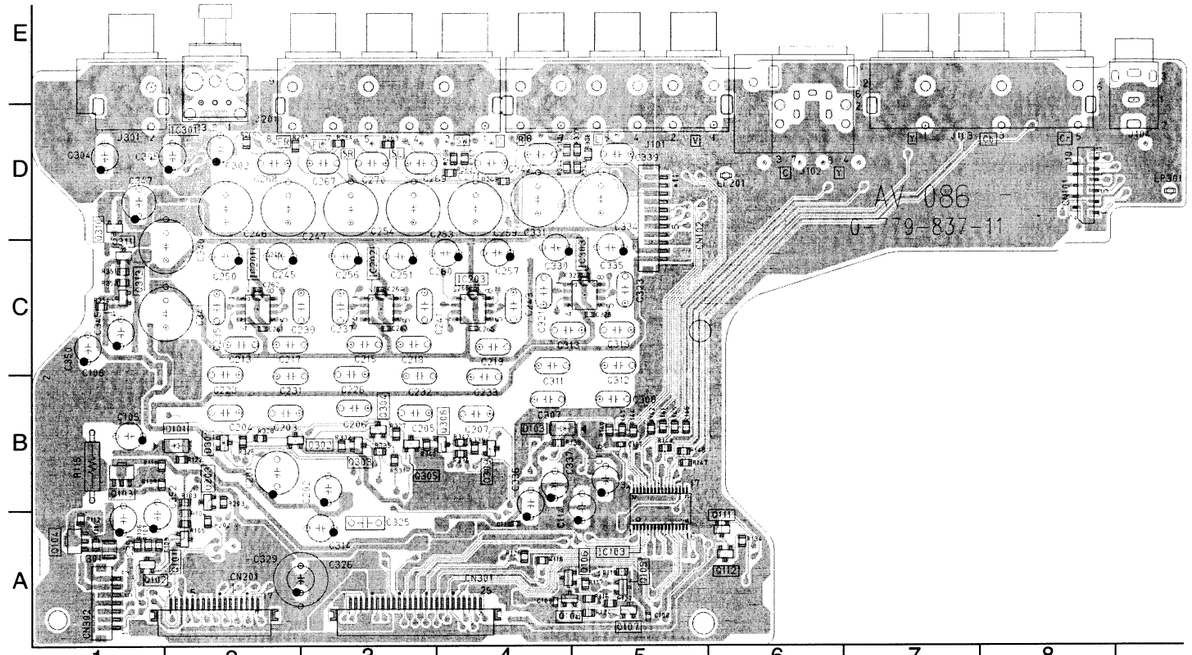
• Refer to page 4-19 for printed wiring board of PL-038 board.



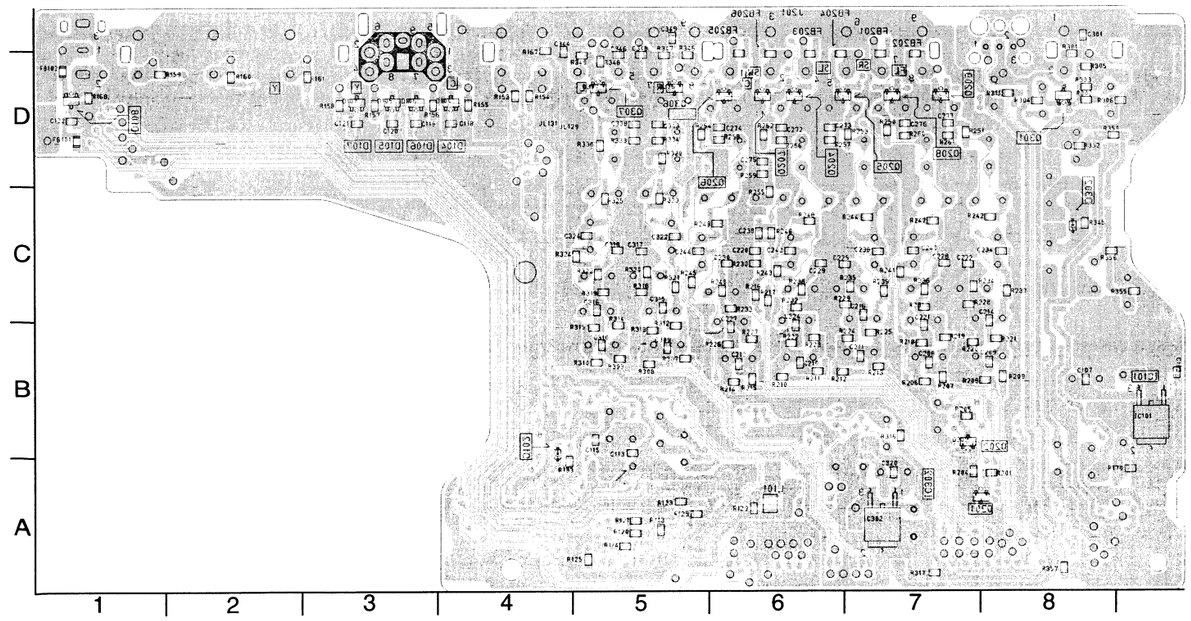
AV-086 (VIDEO, AUDIO) PRINTED WIRING BOARD

• LF : Uses unleaded solder.

AV-086 BOARD A SIDE

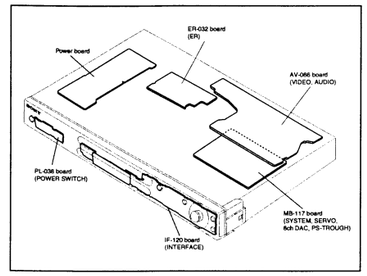


AV-086 BOARD B SIDE



For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.



AV-086 BOARD

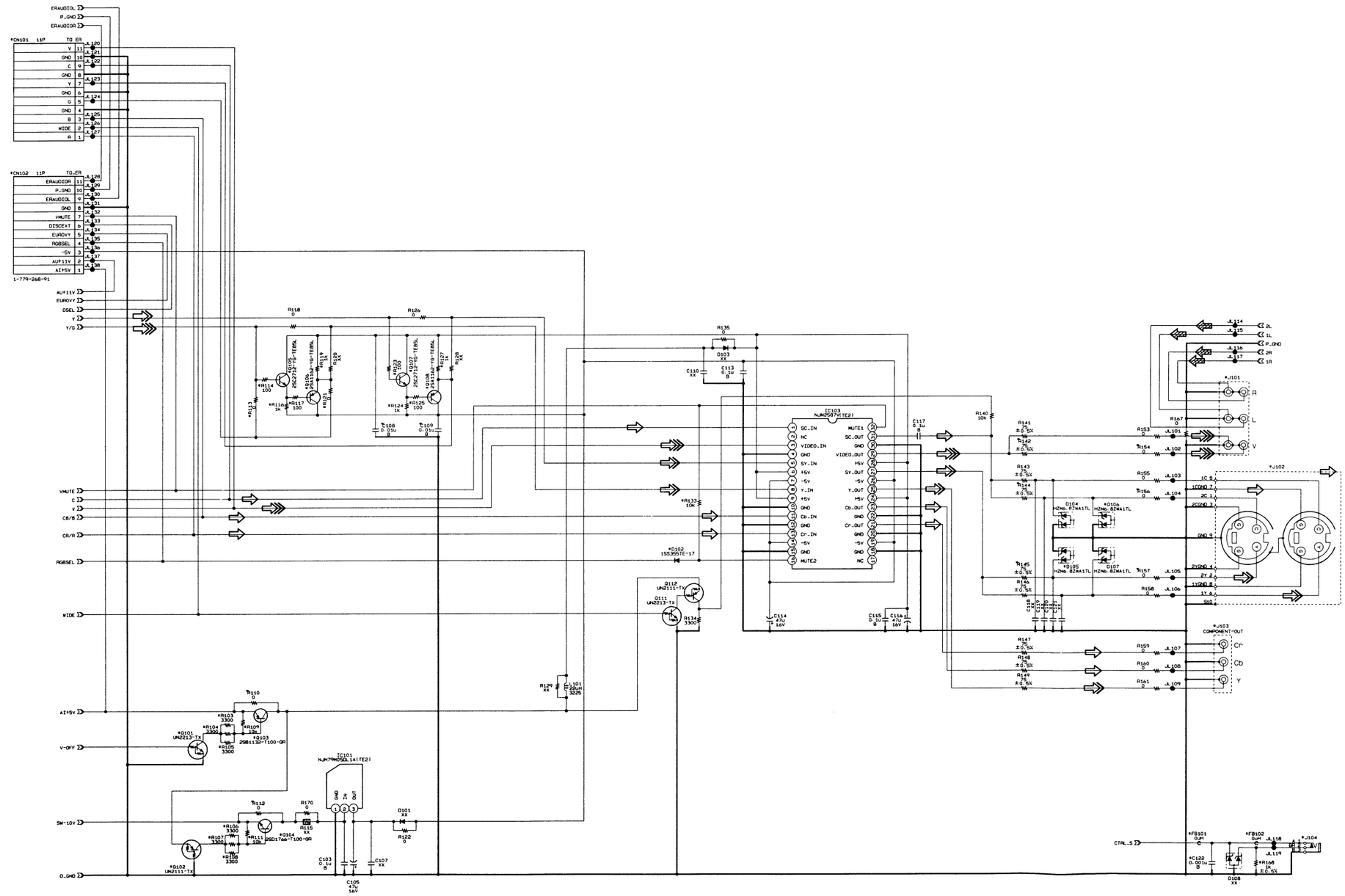
A SIDE		B SIDE	
		IC101	B-9
IC103	A-5	IC305	A-7
IC201	C-2		
IC202	C-3	Q201	A-7
IC203	C-4	Q202	B-8
IC301	D-2	Q205	D-7
		Q206	D-5
Q101	A-2	Q208	D-7
Q102	A-1	Q209	D-7
Q103	B-1	Q301	D-8
Q104	A-1	Q306	D-5
Q105	A-5	Q307	D-5
Q106	A-5	Q309	D-5
Q107	A-5	Q504	D-6
Q108	A-4	Q506	D-7
Q112	A-6	Q507	D-6
Q203	B-2	Q509	D-6
Q302	B-3		
Q303	B-3	D104	D-4
Q305	B-3	D105	D-3
Q308	B-4	D106	D-3
Q309	B-4	D107	D-3
Q310	D-1	D108	D-1
Q311	C-1	D305	C-8
Q312	C-1		
D101	B-2		
D103	B-4		
D301	B-2		

For Schematic Diagram

• Refer to page 4-21 for printed wiring board of AV-086 board.

AV-086 BOARD (1/3)
VIDEO
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT

NO MARK:PB MODE
MARKED:MOUNT TABLE



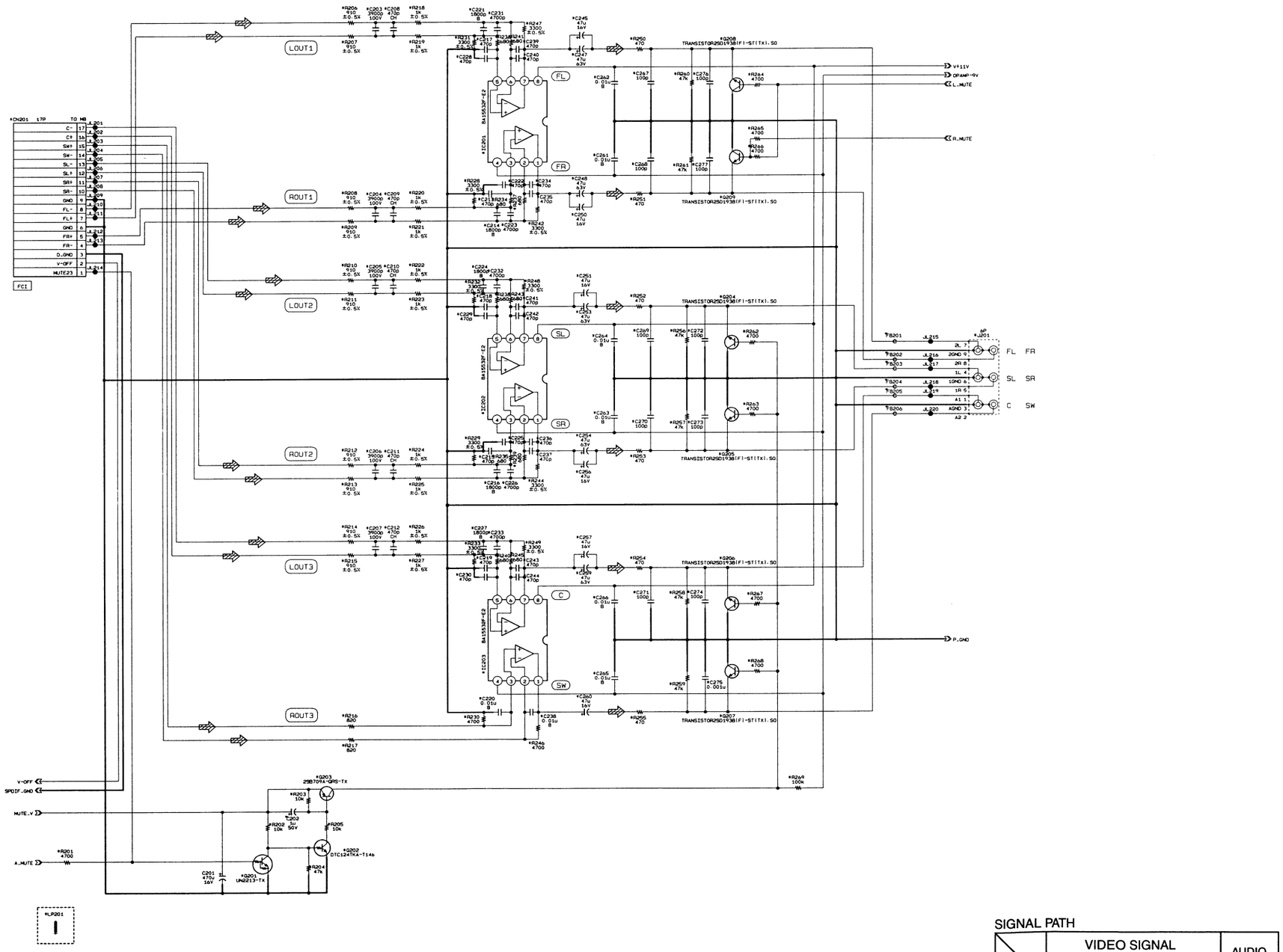
VIDEO
AV-086 (1/3)

For Schematic Diagram

• Refer to page 4-21 for printed wiring board of AV-086 board.

AV-086 BOARD (2/3)
AUDIO (1/2)
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT

NO MARK:PB MODE
MARKED:MOUNT TABLE



SIGNAL PATH

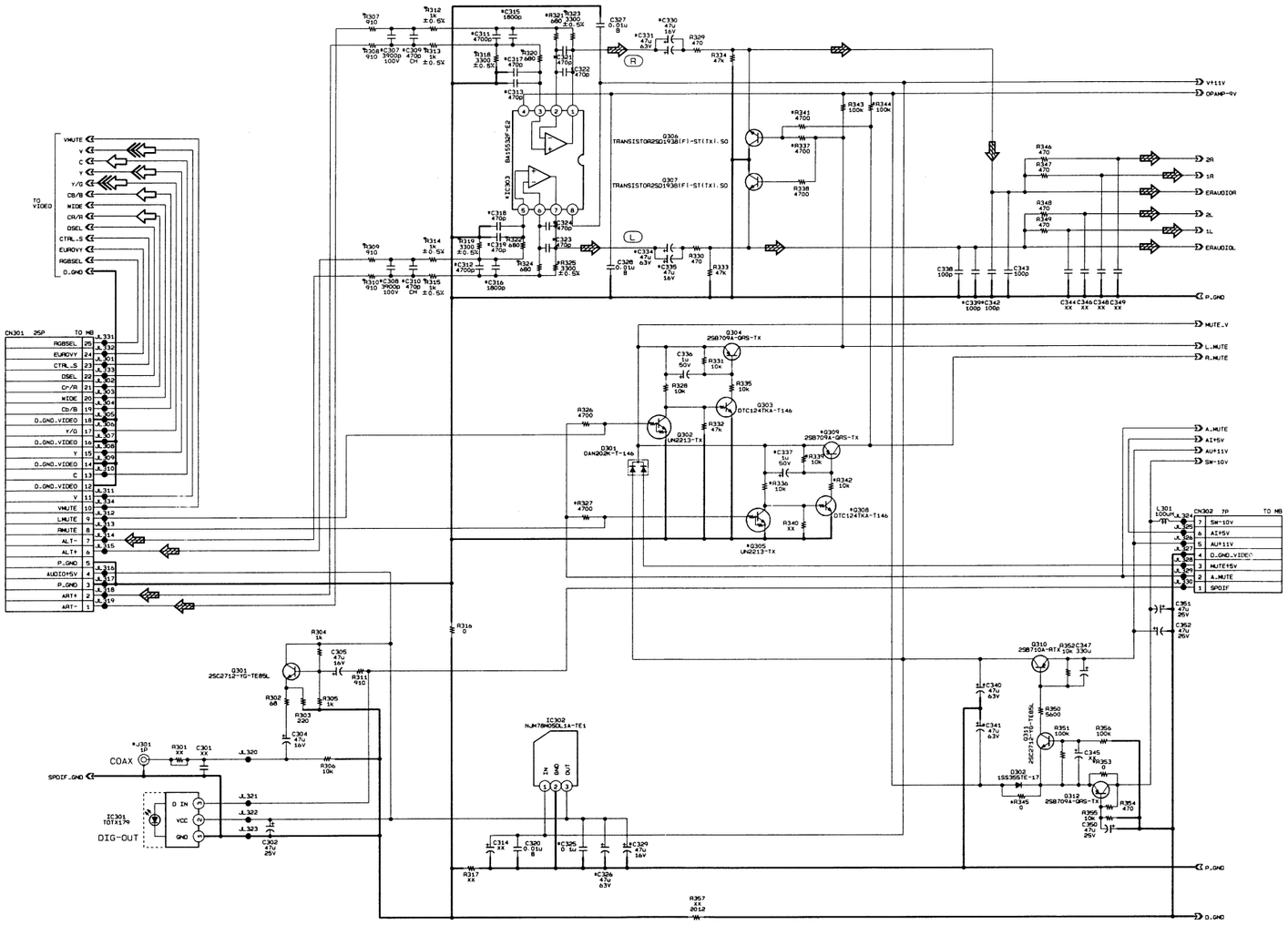
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	⇨

For Schematic Diagram

• Refer to page 4-21 for printed wiring board of AV-086 board.

AV-086 BOARD (3/3)
AUDIO (2/2)
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT

NO MARK:PB MODE
MARKED:MOUNT TABLE



*LP301

SIGNAL PATH

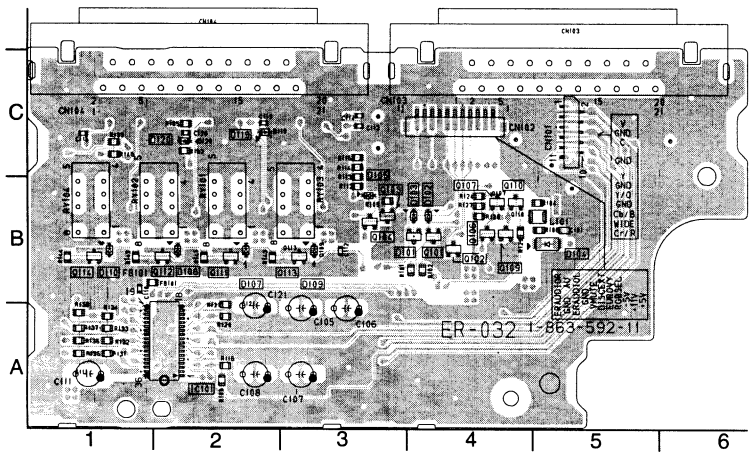
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	⇨

AUDIO (2/2)
AV-086 (3/3)

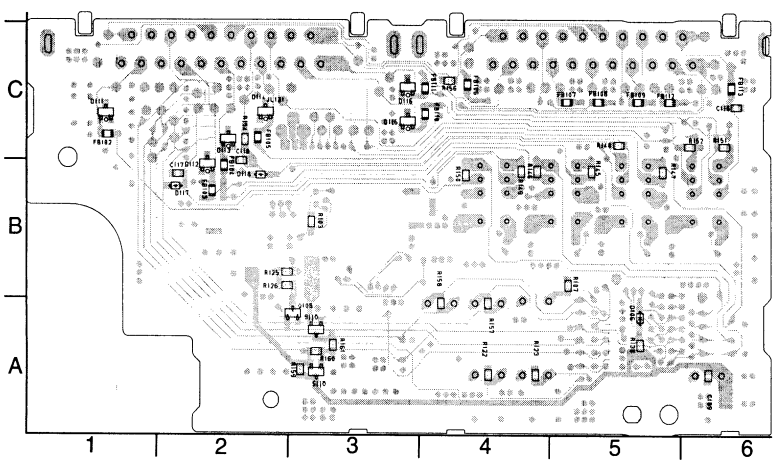
ER-032 (ER) PRINTED WIRING BOARD

• : Uses unleaded solder.

ER-032 BOARD A SIDE

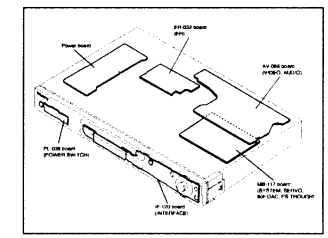


ER-032 BOARD B SIDE



For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.



ER-032 BOARD

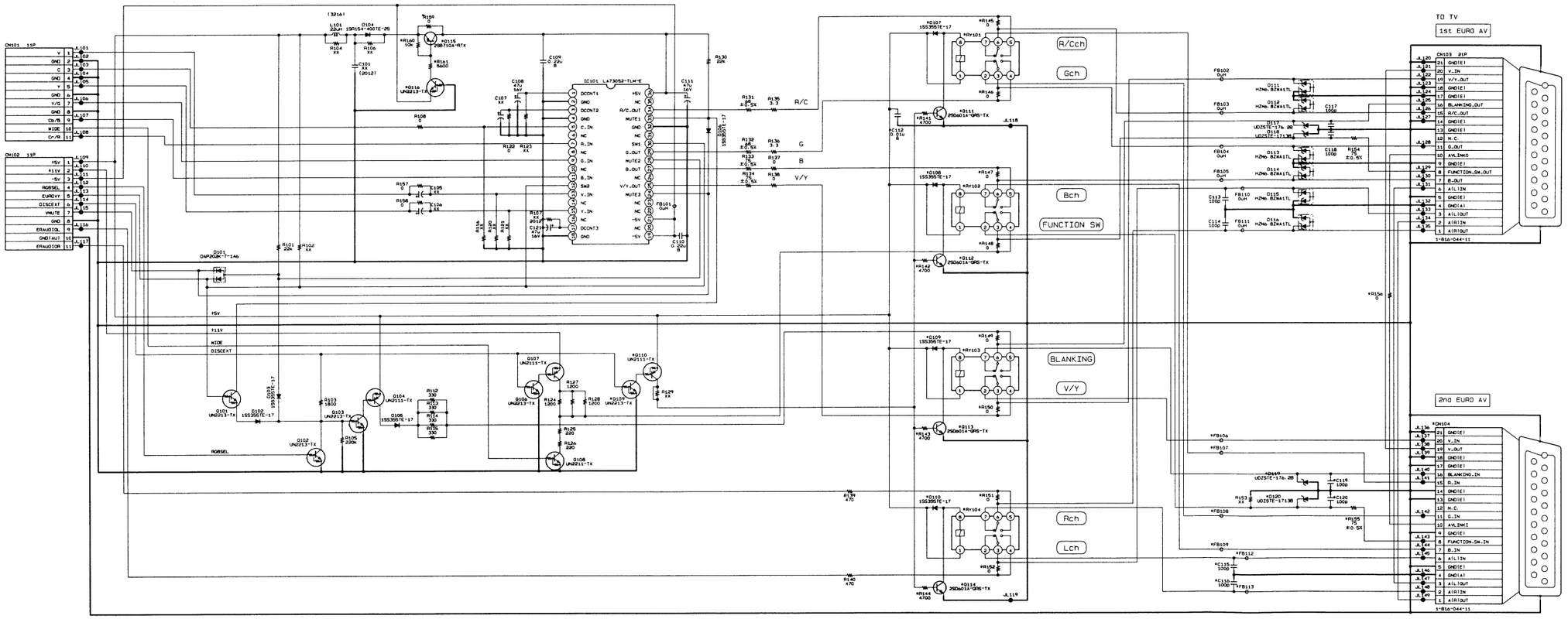
A SIDE		B SIDE	
IC101	A-2	Q108	A-3
		Q115	A-3
Q101	B-4	Q116	A-3
Q102	B-4		
Q103	B-3	D106	A-5
Q104	B-3	D111	C-1
Q106	B-4	D112	B-2
Q107	B-4	D113	C-2
Q109	B-4	D114	C-2
Q110	B-4	D115	C-3
Q111	B-2	D116	C-3
Q112	B-2	D117	B-2
Q113	B-3	D118	B-2
Q114	B-1		
D101	B-4		
D102	B-4		
D103	B-4		
D104	B-5		
D105	C-3		
D107	B-2		
D108	B-2		
D109	B-3		
D110	B-1		
D119	C-2		
D120	C-2		

For Schematic Diagram

• Refer to page 4-29 for printed wiring board of ER-032 board.

ER-032 BOARD
ER
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT

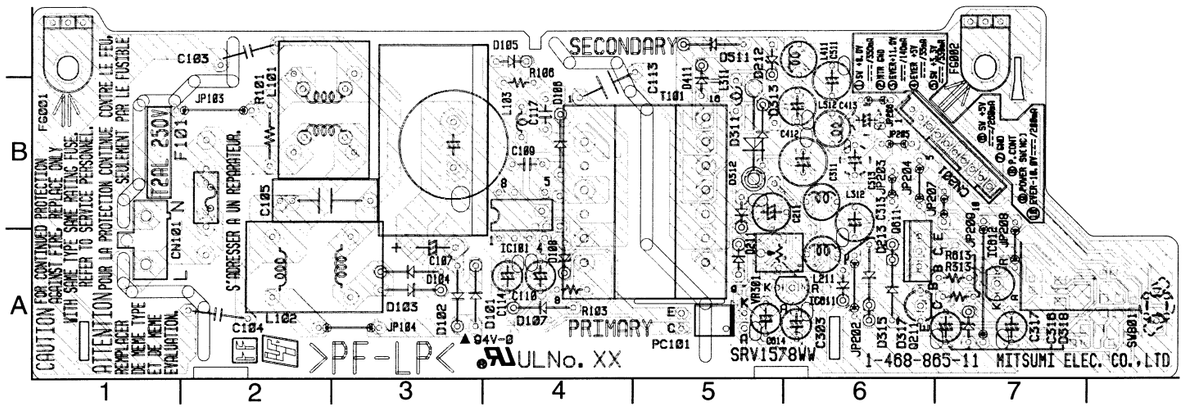
NO MARK:PB MODE
MARKED:MOUNT TABLE



POWER BLOCK (SRV1578WW) PRINTED WIRING BOARD

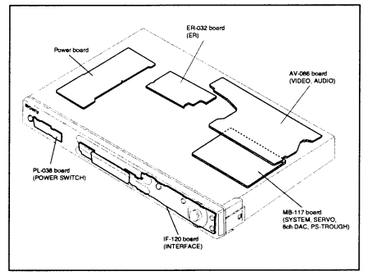
• LF : Uses unleaded solder.

POWER BOARD (SRV1578WW)



For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.



POWER BOARD (SRV1578WW)

A SIDE

A SIDE

IC101 A-4
IC611 A-6
IC612 A-7

Q211 A-6
Q611 B-6

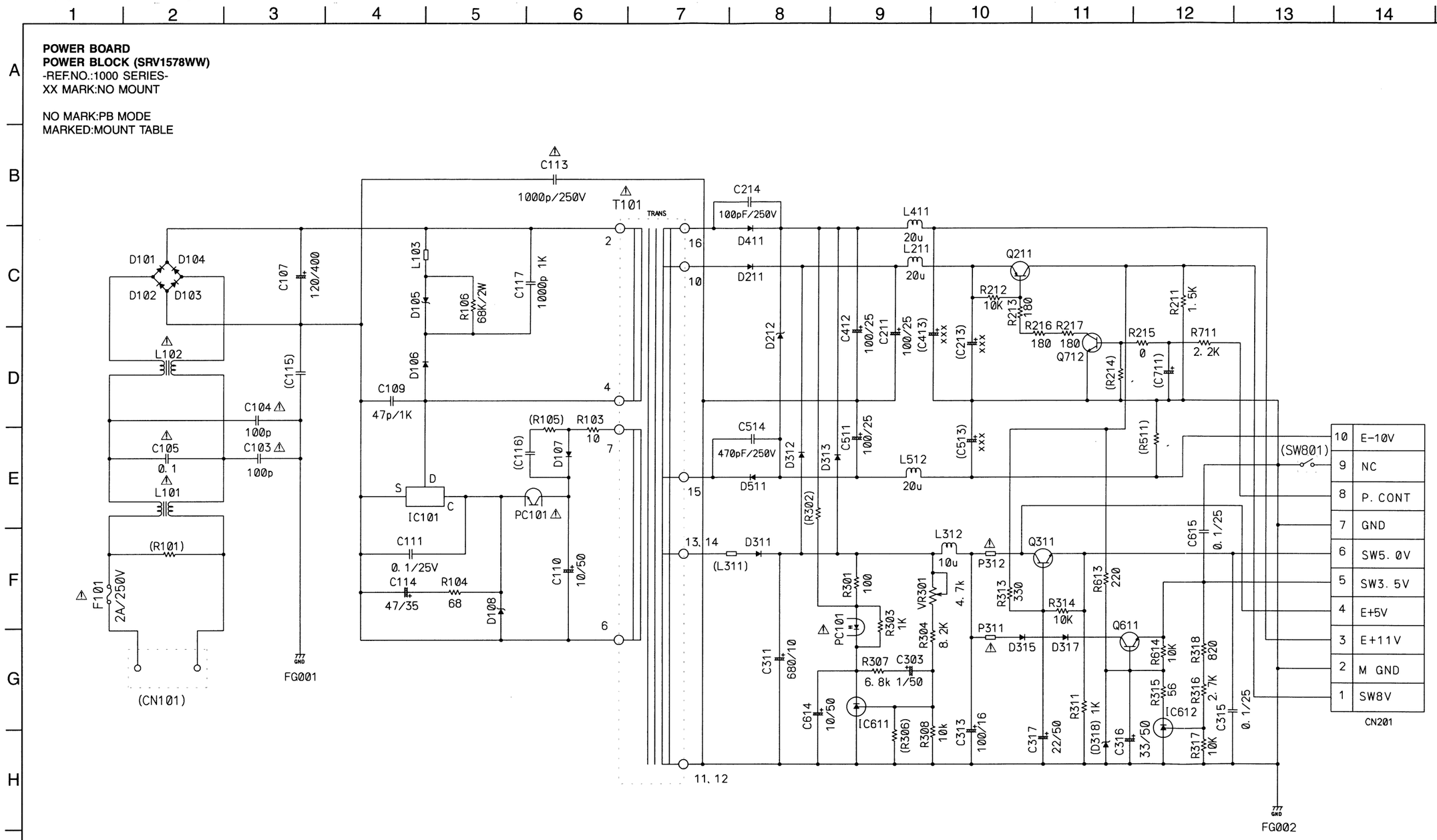
D101 A-4
D102 A-3
D103 A-3
D104 A-3
D105 C-4
D106 B-4
D107 A-4
D108 A-4
D211 A-5
D212 C-5
D213 A-6
D311 B-5
D312 B-5
D313 B-5
D315 A-6
D317 A-6
D318 A-7
D411 B-5
D511 C-5

For Schematic Diagram

• Refer to page 4-33 for printed wiring board of Power Board.

POWER BOARD
POWER BLOCK (SRV1578WW)
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT

NO MARK:PB MODE
MARKED:MOUNT TABLE



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

POWER BOARD
POWER BLOCK (SRV1578WW)

SECTION 5
IC PIN FUNCTION DESCRIPTION

5-1. SYSTEM CONTROL PIN FUNCTION (MB-117 BOARD IC102)

Pin No.	Pin name	Type	Function
1	AGND		Ground pin for analog circuitry
2	DVDA	Analog Input	AC coupled input path A
3	DVDB	Analog Input	AC coupled input path B
4	DVDC	Analog Input	AC coupled input path C
5	DVDD	Analog Input	AC coupled input path D
6	DVDRFIP	Analog Input	AC coupled DVD RF signal input RFIP
7	DVDRFIN	Analog Input	AC coupled DVD RF signal input RFIN
8	MA	Analog Input	DC coupled main-beam RF signal input A
9	MB	Analog Input	DC coupled main-beam RF signal input B
10	MC	Analog Input	DC coupled main-beam RF signal input C
11	MD	Analog Input	DC coupled main-beam RF signal input D
12	SA	Analog Input	DC coupled sub-beam RF signal input A
13	SB	Analog Input	DC coupled sub-beam RF signal input B
14	SC	Analog Input	DC coupled sub-beam RF signal inputC
15	SD	Analog Input	DC coupled sub-beam RF signal input D
16	SDFON	Analog Input	CD focusing error negative input
17	SDFOP	Analog Input	CD focusing error positive input
18	TNI	Analog Input	3 beam satellite PD signal negative input
19	TPI	Analog Input	3 beam satellite PD signal positive input
20	MDI1	Analog Input	Laser power monitor input
21	MDI2	Analog Input	Laser power monitor input
22	LDO2	Analog Output	Laser driver output
23	LDO1	Analog Output	Laser driver output
24	SVDD3	Power	Analog 3.3V power
25	CSO	Analog Output	Central servo
26	RFLVL	Analog Output	RFRP low pass output
27	SGND	Ground	Ground pin for analog circuitry
28	V2REFO	Analog Output	Reference voltage 2.8V
29	V20	Analog Output	Reference voltage 2.0V
30	VREFO	Analog Output	Reference voltage 1.4V
31	FEO	Analog Output	Focus error monitor output
32	TEO	Analog Output	Tracking error monitor output
33	TEZISLV	Analog Output	TE Slicing Level
34	OP_OUT	Analog Output	OP amp output
35	OP_INN	Analog Input	OP amp negative input
36	OP_INP	Analog Input	OP amp positive input
37	DMO	Analog Output	Disc motor control output.PWM output
38	FMO	Analog Output	Feed motor control. PWM output
39	TROPENPWM	Analog Output	Tray PWM output/Tray open output
40	V_ADIN9	Analog Input	General A/D input -> Brake for Tray open/close
41	TRO	Analog Output	PDM output of tracking servo compensator
42	FOO	Analog Output	PDM output of focus servo compensator
43	USB_VSS	Ground	Ground pin for USB
44	USBP	AI/O	USB port DPLUS pin for HS DL
45	USBM	AI/O	USB port DMINUS pin for HS DL
46	USB_VDD3	Power Input LVTTL	3.3V power pin for USB
47	SPFG	3.3 V, SMT,PU	General A/D input -> Iop Monitor
48	AN0	Analog Input	AD input ch0
49	AN1	Analog Input	AD input ch1

Pin No.	Pin name	Type	Function
50	AN2	Analog Input	AD input ch2
51	xMAMUTE	Default Low	Main Audio Mute signal (H: Unmute, L: Mute)
52	DVDD18	Power	1.8V power pin for internal digital circuitry
53	HA2	Output PU	Host address bit2
54	HA3	Output PU	Host address bit3
55	HA4	Output PU	Host address bit4
56	HA5	Output PU	Host address bit5
57	HA6	Output PU	Host address bit6
58	HA7	Output PU	Host address bit7
59	HA8	Output PU	Host address bit8
60	HA18	Output SMT	Host address bit18
61	HA19	Output SMT	Host address bit19
62	DVSS	Ground	Ground pin for internal digital circuitry
63	APLLCAP	Analog Input	APLL External Capacitance connection
64	APLLVSS	Groung	Ground pin for audio clock circuitry
65	APLLVDD3	Power	3.3V power for audio clock circuitry
66	xWR	Output SMT	Write enable, active Low
67	HA16	Output	Host address bit16
68	HA15	Output PU	Host address bit15
69	HA14	Output PU	Host address bit14
70	HA13	Output PU	Host address bit13
71	HA12	Output PU	Host address bit12
72	HA11	Output PU	Host address bit11
73	DVDD3	Power	3.3V power pin for internal digital circuitry
74	HA10	Output PU	Host address bit10
75	HA9	Output PU	Host address bit9
76	HA20	Output SMT	Host address bit20
77	xROMCS	Output PU, SMT	Chip select, active Low
78	HA1	Output PU	Host address bit1
79	xRD	Output SMT	Read enable, active Low
80	DVDD3	Power	3.3V power pin for internal digital circuitry
81	HD0	Output	Host data bit0
82	HD1	Output	Host data bit1
83	HD2	Output	Host data bit2
84	HD3	Output	Host data bit3
85	DVSS	Ground	Ground pin for internal digital circuitry
86	HD4	Output	Host data bit4
87	HD5	Output	Host data bit5
88	HD6	Output	Host data bit6
89	HA21	Output SMT	Host data bit21
90	ALE	Output PU,SMT	Address latch enable
91	HD7	Output	Host data bit7
92	HD17	Output	Host address bit17
93	HA0	Output PU	Host address bit0
94	DVSS	Ground	Ground pin for internal digital circuitry
95	UWR#	Output PU,SMT	8032 write strobe
96	URD#	Output PU,SMT	8032 read strobe
97	DVDD18	Power Output PU,SMT	1.8V power pin for internal digital circuitry
98	IFSDO	Default High Output PU,SMT	Ext. CPU Serial data output (H/W method)
99	IFCK	Default High Output PU,SMT	Ext. CPU Serial clock (H/W method)
100	xIFCS	Default High	Chip select for Ext.CPU (Low Active, H/W method)

Pin No.	Pin name	Type	Function
101	IR	Input SMT Output PU,SMT	IR control signal input
102	SCL	Default High Output PU,SMT	IIC clock pin
103	SDA	Default High Output PU,SMT	IIC data pin
104	UP3_0	Default High	8032 GPIO
105	IFBSY	Int PU,SMT	Ext. CPU Ready/Busy interrupt signal (H: Busy, L: Ready)
106	RXD	Input PU,SMT Output PU,SMT	Hardwired RS232C RXD
107	TXD	Default High	Hardwired RS232C TXD
108	DVDD3	Power	3.3V power pin for internal digital circuitry
109	ICE	Output PU,SMT	Ice mode enable
110	xSYSRST	Input PU,SMT	MT1389 reset input, active Low
111	IR	Input SMT	IR control signal input
112	INT0#	Input PU,SMT	8032 external interrupt 0 (for ICE)
113	DQM0	Output Output Default	Mask for DRAM input/output byte 0
114	GPIO	Low	GPIO
115	RD7	Output	DRAM data bit7
116	DVSS	Ground	Ground pin for internal digital circuitry
117	RD6	Output	DRAM data bit6
118	RD5	Output	DRAM data bit5
119	DVSS	Ground	Ground pin for internal digital circuitry
120	RD4	Output	DRAM data bit4
121	RD3	Output	DRAM data bti3
122	DVDD18	Power	1.8V power pin for internal digital circuitry
123	RD2	Output	DRAM data bit2
124	RD1	Output	DRAM data bit1
125	RD0	Output	DRAM data bit0
126	RD15	Output	DRAM data bit15
127	DVDD3	Power	3.3V power pin for internal digital circuitry
128	RD14	Output	DRAM data bit14
129	RD13	Output	DRAM data bit13
130	RD12	Output	DRAM data bit12
131	RD11	Output	DRAM data bit11
132	RD10	Output	DRAM data bit10
133	RD9	Output	DRAM data bit9
134	DVSS	Ground	Ground pin for internal circuitry
135	RD8	Output Output Default	DRAM data bit8
136	GPIO	Low	GPIO
137	DQM1	Output	Mask for DRAM input/output byte 1
138	RWE#	Output	DRAM write enable
139	CAS#	Output	DRAM columm address strobe
140	RAS#	Output	DRAM row address strobe
141	DVDD3	Power	3.3V power pin for internal digital circuitry
142	RCS#	Output	DRAM chip select
143	BA0	Output	DRAM bank address 0
144	DVSS	Ground	Ground pin for internal digital circuitry
145	BA1	Output	DRAM bank address 1
146	RA10	Output	DRAM address bit10
147	RA0	Output	DRAM address bit0
148	DVSS	Ground	Ground pin for internal digital circuitry
149	RA1	Output	DRAM address bit1

Pin No.	Pin name	Type	Function
150	RA2	Output	DRAM address bit2
151	RA3	Output	DRAM address bit3
152	DVDD18	Power	1.8V power pin for internal digital circuitry
153	RVREF	Analog Input	Reference voltage for DDR DRAM
154	RCLKB	Output	DRAM clock invert
155	DVDD3	Power	3.3V power pin for internal digital circuitry
156	DRCLK	Output	DRAM clock
157	CKE	Output	DRAM clock enable
158	RA11	Output PD	DRAM address bit11
159	RA9	Output	DRAM address bit9
160	RA8	Output	DRAM address bit8
161	DVSS	Ground	Ground pin for internal digital circuitry
162	RA7	Output	DRAM address bit7
163	DVSS	Ground	Ground pin for internal digital circuitry
164	RA6	Output	DRAM address bit6
165	RA5	Output	DRAM address bit5
166	RA4	Output	DRAM address bit4
167	DVDD3	Power Output PU	3.3V power pin for internal digital circuitry
168	DISC/xEXT	Default Low	DISC/External input select output signal (H: DISC, L: EXTin)
169	RGBSEL	Output PU Output Default	RGB/YCbCr select output signal (H: RGB Disable, L: RGB Enable)
170	xsmrst	Low	Reset output signal for HDMI sub CPU (Low Active)
171	WIDE	Output Output Default	Voltage select output signal for S terminal (H: 16:9, L: 4:3)
172	NT/xPAL	Low	NTSC/PAL select output signal (H: NTSC, L: PAL)
173	DVDD18	Power Output Default	1.8V power pin for internal digital circuitry
174	EUROVY	High	CVBS/S terminal select output signal (H:CBVS, L: S-terminal)
175	DVSS	Ground	Ground pin for internal digital circuitry
176	LIMITSW	Input	GPIO bit9 for Servo group
177	OCSW	Input Output PU	GPIO bit8 for Servo group
178	VCLK	Default Low	27MHz synchoronous clock output for Video data
179	CKSW	Input PU	GPIO bit7 for Servo group
180	IO3	Output PD	GPIO
181	TSD_M	Output PD	GPIO bit5 for Servo group
182	DVDD3	Power	3.3V power pin for internal digital circuitry
183	MUTE	Output PD	GPIO bit4 for Servo group
184	MUTE123	Output PD	GPIO bit3 for Servo group
185	REV	Output PD	GPIO bit2 for Servo group
186	FWD	Output PD	GPIO bit1 for Servo group
187	MSW	Input PD	GPIO bit0 for Servo group
188	DSEL	Output PD	Interlace/Progressive select output signal (H: 480p, L: 480i)
189	DACVDDC	Power	3.3V power for Video DAC circuitry
190	VREF	Analog Input	Bandgap Ref Voltage (No connect)
191	FS	Analog Input	Full Scale Adjustment Compensation capacitor
192	CIN/YUV0	Output	Video data output bit0
193	DACVDDC	Ground	Ground pin for Video DAC circuitry Analog Y output
194	Y/YUV1	Output	Video data output bit1
195	DACVDDB	Power	3.3V power for Video DAC circuitry Analog chroma output
196	C/YUV2	Output	Video data output bit2

Pin No.	Pin name	Type	Function
197	DACVSSB	Ground	Ground pin for Video DAC circuitry Analog composite output
198	CVBS/YUV3	Output	Video data output bit3
199	DACVDDA	Power	3.3V power for Video DAC circuitry Green or Y
200	YG/YUV4	Output	Video data output bit4
201	DACVSSA	Ground	Ground pin for Video DAC circuitry Blue or Cb
202	B/Cb/Pb YUV5	Output	Video data output bit5 Red or Cr
203	R/Cr/Pr YUV6	Output	Video data output bit6
204	DVDD3	Power	3.3V power pin for Video DAC digital circuitry
205	VSYN	Output SMT	Vertical sync signal output for ITU-R BT.601
206	YUV7	Output SMT	Video data output bit7
207	HSYN	Output SMT Output Default	Horizontal sync signal output for ITU-R BT.601
208	SMSCK	High	HDMI Sub CPU Serial clock
209	SMSDI	Input Output Default	HDMI Sub CPU Serial data input
210	SMSDO	High Output Default	HDMI Sub CPU Serial data input
211	xSMCS	High	Chip Select signal output to HDMI Sub CPU
212	DVDD3	Power	3.3V power pin for internal digital circuitry
213	ALRCK	Output PD,SMT	Audio left/right channel clock
214	ABCK	Output	Audio Bit Clock output
215	ACLK	Output	Master clock output for Audio DAC
216	DVSS	Ground	Ground pin for internal digital circuitry
217	ASDATA0	Output PD,SMT	Audio serial data 0 : L/R
218	ASDATA1	Output PD,SMT	Audio serial data 1 : SL/SR
219	ASDATA2	Output PD,SMT Output PD,SMT	Audio serial data 2 : C/SW
220	xRST	Default Low	Reset output signal for ADAC (Low Active)
221	DVDD18	Power	1.8V power pin for intenal digital circuitry
222	ASDATA4	Output PD,SMT	Audio serial data 4: Down-mixed L/R
223	DVSS	Ground	Ground pin for internal digital circuitry
224	D-WIDE	Input	Video aspect ratio control for D-terminal. (H: 16:9, L: 4:3)
225	SPDIF	Output	SPDIF output
226	RFGND18	Ground	Ground pin for internal analog circuitry
227	RFVDD18	Power	1.8V power pin for internal analog circuitry
228	XTALO	Output	27M crystal output
229	XTALI	Input	27M crystal input
230	JITFO	Analog Output	The output terminal of RF jitter meter
231	JITFN	Analog Input	The input terminal of RF jitter meter
232	PLLVSS	Ground	Ground pin for data PLL and related analog circuitry
233	IDACEXLP	Analog Output	C input
234	PLLVDD3	Power	3.3V power pin for data PLL and related analog circuitry
235	LPFON	Analog Output	The negative output terminal of loop filter amplifier
236	LPFIP	Analog Input	The positive input terminal of loop filter amplifier
237	LPFIN	Analog Input	The negative input of loop filter amplifier
238	LPFOP	Analog Output	The positive output of loop filter amplifier
239	ADCVDD3	Power	Power pin for ADC circuitry
240	S_VCM	Analog Input	SACD Commom mode reference
241	ADCVSS	Ground	Ground pin for ADC circuitry
242	S_VREFP	Analog Input	SACD Top reference
243	S_VREFN	Analog Input	SACD Buttom reference
244	RFVDD3	Power	3.3V power pin for RF digital circuitry

Pin No.	Pin name	Type	Function
245	RFRPDC	Analog Output	RF ripple detect output
246	RFRPAC	Analog Input	RF ripple detect input (through AC-coupling)
247	HRFZC	Analog Input	High frequency RF ripple zero crossing
248	CRTPLP	Analog Output	Defect level filter capacitor connecting
249	RFGND	Ground	Ground pin for RF digital circuitry
250	CEQP	Analog Output	EQ offset loop capacitance
251	CEQN	Analog Output	EQ offset loop capacitance
252	OSP	Analog Output	RF Offset cancellation capacitor connecting
253	OSN	Analog Output	RF Offset cancellation capacitor connecting
254	RFGC	Analog Output	RF AGC loop capacitor conecting for DVD-ROM
255	IREF	Analog Input	Current reference input
256	AVDD3	Power	3.3V power pin for analog circuirtry

DVP-LS785V

SECTION 6
TEST MODE

6-1. GENERAL DESCRIPTION

The Mirror Time and IOP measurement allows you to make diagnosis and adjustment simply by using the remote commander and monitor TV. The instructions, diagnosis results, etc. are given on the on screen display (OSD).

The Mirror Time and IOP measurement is required is such events where servicing a DVD-Player includes changing the Base Unit (BU). For each new BU to be used with a certain MB-117 board, Mirror Time and IOP measurement need to be carried out.

6-2. STARTING TEST MODE

Press the [TOP MENU], [CLEAR], [POWER] keys on the remote commander in this order with the DVD player in standby mode. The Test Mode starts, then the menu shown below will be displayed on the TV screen.

```
Remocon Diagnosis Menu

0. External Chip Check
1. Servo Parameter Check
2. Drive Manual Operation
3. Emergency History
4. Version Information
5. Video Level Adjustment

Model Name : DPX-xxxx_xx
IF-con     : Ver. x.xxx (xxxx)
Syscon     : Ver. x.xxx
```

The menu above is the Remocon Diagnosis Menu screen which consists of six main function. At the bottom of the menu screen, the model name and IF-con version. To enter Mirror Time Adjustment menu, press button [2] on the remote commander to enter Drive Manual Operation menu. To exit from the Test Mode, press the power button on the remote commander.

6-3. DRIVE MANUAL OPERATION

The Drive Manual Operation menu consists of five main function. By pressing [2] on the remote commander in the Remocon Diagnosis Menu, the screen will appear as below.

```
Drive Manual Operation

1. Servo Control
2. Track/Layer Jump
3. Manual Adjustment
4. Tray Aging Mode
5. Mirr Time Adjust
0. Return to Top Menu
```

6-4. MIRROR TIME ADJUSTMENT

To enter Mirror Time Adjustment, press [5] on the remote commander. The screen will appear as below.

```
Mirr time Adjust Menu

1. CD MIRR time Check:
2. DVD MIRR time Check:
3. Threshold:
4. Save to EEPROM
5. Default set MIRR time

[Open] Tray open [Close] Tray close
[0] Return to previous menu
```

There are five main commands in the Mirr time Adjust menu as shown in the figure above. The functions of each command are described in the following page.

1. CD Mirr time Check
This command checks the Mirror time value for CD disc.

2. DVD Mirr time Check
This command checks the Mirror time value for DVD disc.

3. Threshold
This command displays the threshold value between CD and DVD mirror time.

4. Save to EEPROM
This command saves an adjusted mirror time value to the EEPROM.

5. Default set MIRR time
This command will set CD and DVD mirror time to firmware default value.

[Open] / [Close]
Pressing the [Open] / [Close] button controls the tray for disc change during mirror time adjustment.

[0] Return to previous menu
Press [0] button to return to previous menu.

6-4-1. EXECUTING MIRROR TIME ADJUSTMENT

In order to execute mirror time adjustment, the following standard procedures must be followed.

(1) In standby mode, press [TOP MENU], [CLEAR], [POWER] to enter Remocon Diagnosis Mode.

(2) Select "2. Drive Manual Operation".

```
Remocon Diagnosis Menu

0. External Chip Check
1. Servo Parameter Check
2. Drive Manual Operation
3. Emergency History Check
4. Version information
5. Video Level Adjustment

Model      : DPX-xxxx_xx
IF-con     : Ver. x.xxx (xxxx)
Syscon     : Ver. x.xxx
```


(3) Select "5. MIRR time Adjust".

```
Drive Manual Operation

1. Servo Control
2. Track/Layer Jump
3. Manual Adjustment
4. Tray Aging Mode
5. MIRR time Adjust
0. Return to Top Menu
```

(4) Select "5. Default set MIRR time".

```
MIRR time adjustment Menu

1. CD MIRR time Check:
2. DVD MIRR time Check:
3. Threshold:
4. Save to EEPROM:
5. Default set MIRR time:

[Open] Tray open [Close] Tray close
[0] Return to previous menu
```

(5) Select "3. Threshold".

(6) Confirm the number. If it is 75, go to next step. If it is any other value, return to step 4.

```
MIRR time adjustment Menu

1. CD MIRR time Check:
2. DVD MIRR time Check:
3. Threshold: (75)
4. Save to EEPROM:
5. Default set MIRR time:

[Open] Tray open [Close] Tray close
[0] Return to previous menu
```

(7) Push "Open/Close" key to eject tray.

(8) Insert Test Disc HLX-504 into tray.

(9) Push "Open/Close" key to close tray.

(10) Push "2. DVD MIRR time Check".

(11) Wait for HEX number to display.

(12) Confirm the number, if XX is 28 ~ 70, proceed with next step. If no, return to 8.

```
MIRR time adjustment Menu

1. CD MIRR time Check:
2. DVD MIRR time Check: xx (xx)
3. Thereshold:
4. Save to EEPROM:
5. Default set MIRR time:

[Open] Tray open [Close] Tray close
[0] Return to previous menu
```

(13) Push "4. Save to EEPROM".

(14) Confirm the same values are displayed. If it is not same, return to step 7.

```
MIRR time adjustment Menu

1. CD MIRR time Check:
2. DVD MIRR time Check: (XX XX)
3. Threshold:
4. Save to EEPROM:
5. Default set MIRR time:

[Open] Tray open [Close] Tray close
[0] Return to previous menu
```

(15) Push "Open/Close" key to eject tray.

(16) Take out HLX-504 and insert Test Disc YEDS-18 into tray.

(17) Push "Open/Close" key to close tray.

(18) Push "1. CD MIRR time check".

(19) Wait for HEX number to display.

(20) Confirm the number, if YY is 5A ~ E8, proceed with next step. If no, return to 15.

```
MIRR time adjustment Menu

1. CD MIRR time Check: yy (YY)
2. DVD MIRR time Check: XX XX
3. Threshold:
4. Save to EEPROM:
5. Default set MIRR time:

[Open] Tray open [Close] Tray close
[0] Return to previous menu
```

(21) Push "4. Save to EEPROM".

(22) Confirm the same values are displayed. If it is not the same, return to step 15.

```
MIRR time adjustment Menu

1. CD MIRR time check: (YY YY)
2. DVD MIRR time check: XX XX
3. Threshold:
4. Save to EEPROM:
5. Default set MIRR time:

[Open] Tray open [Close] Tray close
[0] Return to previous menu
```

(23) Push "Open/Close" key to eject tray.

(24) Remove Test Disc YEDS-18 from tray.

(25) Push "Open/Close" key to close tray.

(26) Press "0" to return to the Drive Manual Operation menu.

(27) Press "0" to return to the Remocon Diagnosis Menu.

(28) Press power button to switch OFF set.

6-5. EXECUTING IOP MEASUREMENT

In order to execute mirror time adjustment, the following standard procedures must be followed.

(1) In standby mode, press [TOP MENU], [CLEAR], [POWER] to enter Remocon Diagnosis Mode.

```
Remocon Diagnosis Menu

0. External Chip Check
1. Servo Parameter Check
2. Drive Manual Operation
3. Emergency History Check
4. Version information
5. Video Level Adjustment

Model      : DPX-1790_UC2
IF-con Ver : 1.000 (5B84)
Syscon Ver : 1.81
```

(2) Select "2. Drive Manual Operation" by pressing the [2] key on the remote commander. The screen will appear as below.

```
Drive Manual Operation

1. Servo Control
2. Track/Layer Jump
3. Manual Adjustment
4. Tray Aging Mode
5. MIRR time adjust
0. Return to top Menu
```

(3) Select "3. Manual Adjustment" by pressing the [3] key on the remote commander. The screen will appear as below.

```
Manual Adjust

1. Track Balance Adjust:
2. Track Gain Adjust:
3. Focus Balance Adjust:
4. Focus Gain Adjust:
5. Eg boost Adjust:
6. Iop:
7. TRV. Level:
8. S curve(FE) Level:
9. RFL(PI) Level:
0. MIRR Time:

? ? Change Value
[RETURN] Return to previous menu
```

(4) Select Iop by pressing [6] key on the remote commander.

(5) Wait until a hexadecimal number appear.

```
Manual Adjust

1. Track Balance Adjust:
2. Track Gain Adjust:
3. Focus Balance Adjust:
4. Focus Gain Adjust:
5. Eq Boost Adjust:
6. Iop(ED:)
7. TRV. Level:
8. S curve(FE) Level:
9. RFL(PI) Level:
0. MIRR Time:

Change Value
[0] Return to previous menu
```

(6) Convert data from hexadecimal to decimal using conversion table.

(9) Press [RETURN] to return back to previous menu.

(10) Press [0] to return to Top Menu and power OFF the DVD Player.

6-6. EMERGENCY HISTORY CHECK

Information of Emergency History.

(1) In stanby mode, press [TOP MENU], [CLEAR], [POWER] to enter Remocon Diagnosis Mode.

(2) Select "3. Emergency History".

```
Emg. History Check

Laser Hours      CD    999h   59min
                 DVD   999h   59min

1. 01 05 04 04        00 92 46 00
   00 00 00 00        00 00 23 45

2. 02 02 01 01        00 A9 4B 00
   00 00 00 00        00 00 23 45

[Next] Next Page [Prev] Prev Page
```

(3) Laser Hours
DVD Laser ON time. (Total ON time)
CD Laser ON time. (Total ON time)

(4) Emergency History
The history information from last "1" to "10" can be scrolled with [NEXT] key or [PREV] key.

(5) Error code

```
Example of Error code

1. [01] 05 04 04        00 92 46 00
   00 00 00 00          00 00 23 45
```

(6) Error code list
01: Communication error (No reply from syscon)
02: Syscon hung up
03: Power OFF request when syscon hung up
19: Thermal shutdown
24: MoveSledHome error
25: Mecha move error (5 Changer)
26: Mecha move stack error
30: DC Motor adjustment error
31: DPD offset adjustment error
32: TE Balance adjustment error
33. TE Sensor adjustment error
34. TE loop gain adjustment error
35. FE loop gain adjustment error
36. Bad jitter after adjustment
40. Focus NG
42. Focus Layer Jump NG
52. Open kick spindle error
51: Spindle stop error
60: Focus on error
61: Seek fail error
62: read Qdata/ID error
70: Lead In Data Read Fail
71: TOC read time out (CD)
80: Can't Buffering
81: Unknown media type

(7) Error code parameters

```
Example of Error code

1. 01 [05 04 04        00 92 46 00]
   [00 00 00 00        00 00]23 45
```

This is the detailed contents od error information

(8) Laser hours at error happend.

```
Example of Error code

1. 01 05 04 04        00 92 46 00
   00 00 00 00        00 00 [23 45]
```

This is Laser hours when an error happaned.

(9) How to Clearing laser hours
Press [DISPLAY], [CLEAR] keys in this order.
Both CD and DVD data are cleared.

```
Emg. History Check

Laser Hours      CD    0h     0min
                 DVD   0h     0min

1. 01 05 04 04        00 92 46 00
   00 00 00 00        00 00 23 45

2. 02 02 01 01        00 A9 4B 00
   00 00 00 00        00 00 23 45

[Next] Next Page [Prev] Prev Page
[0] Return to Top Menu
```

(10) How to Clearing Emergency code
Press [TOPMENU], [CLEAR] keys in this order.
All emergency code are cleared.

```
Emg. History Check

Laser Hours      CD    999h   59min
                 DVD   999h   59min

1. 00 00 00 00        00 00 00 00
   00 00 00 00        00 00 00 00

2. 00 00 00 00        00 00 00 00
   00 00 00 00        00 00 00 00

[Next] Next Page [Prev] Prev Page
```

(11) Press [0] key, return to TOP MENU.

6-7. INITIALIZING SETUP DATA

How to initializing setup data.

(1) In stanby mode, press [TOP MENU], [CLEAR], [POWER] to enter Remocon Diagnosis Mode.

(2) Select "3. Emergency History".

```
Emg. History Check

Laser Hours      CD    999h   59min
                 DVD   999h   59min

1. 01 05 04 04        00 92 46 00
   00 00 00 00        00 00 23 45

2. 02 02 01 01        00 A9 4B 00
   00 00 00 00        00 00 23 45

[Next] Next Page [Prev] Prev Page
```

(3) Initializing setup data
Press [MENU], [CLEAR] keys in this order.
The data have been initialized when "Initialize setup data..." mesage is displayed.

```
Emg. History Check

Laser Hours      CD    999h   59min
                 DVD   999h   59min

Initialize setup data ...

[Next] Next Page [Prev] Prev Page
```

(4) The Emergency history display screen will be restored soon.

```
Emg. History Check

Laser Hours      CD    999h   59min
                 DVD   999h   59min

1. 01 05 04 04          00 92 46 00
   00 00 00 00          00 00 23 45

2. 02 02 01 01          00 A9 4B 00
   00 00 00 00          00 00 23 45

[Next] Next Page [Prev] Prev Page
```

(12) Press [0] key, return to TOP MENU.

6-8. VERSION INFORMATION

Information of firmware version.

(1) In stanby mode, press [TOP MENU], [CLEAR], [POWER] to enter Remocon Diagnosis Mode.

(2) Select "4. Version Information".

```
Version information

Firm (Main)  : Ver. xxxxx
Firm (Sub)   : xxxxx
RISC         : xxxxx
8032         : xxxxx
Audio DSP    : xxxxx
Servo DSP    : xxxxx

[0] Return to Top Menu
```

(3) Press [0] key, return to TOP MENU.

6-9. IF CON SELF DIAGNOSTIC FUNCTION

1. IF-120 BOARD (IF CON) TEXT MODE

The IF-120 board (IF CON) test mode is the IF CON self-diagnosis mode. THe IF CON can diagnose the functions of the IF-120 board that the IF CON controls. Normally, the IF CON makes a serial communication with the SYSTEM CONTROL and operates following the commands from the SYSTEM CONTROL, but in the Test mode, the IF CON operates independently from the SYSTEM CONTROL.

In the test mode, the following functions can be checked.
1. Button function
2. Remote commander receiving function
3. SYSTEM CONTROL-IF CON serial communication
4. Fluorescent display tube lighting check
   - Grid check
   - Anode check
5. LED control function

In the test mode, the main unit operates same as usual, except voltage monitoring, communication, display of fluorescent display tube, and LED control.
1. The routine that monitors +3.3V (PCONT) of MB-117 board is not provided.
2. The monitoring timer for serial communication with the SYSTEM CONTROL is not provided. The main unit is not placed in the Standby mode, even if the communication with SYSTEM CONTROL is normal.
3. Display of fluorescent display tube.
   (Normally, display is mode following the commands from SYSTEM CONTROL).
4. LED control.
   (Normally, control is mode made following the commands from SYSTEM CONTROL).

2. OPERATION OF SELF CHECK MODE

The Self Check mode is the function to conduct the basic test to t2. OPERATION OF SELF CHECK MODE
The Self Check mode is the function to conduct the basic test to the FL display and DVD panel section.

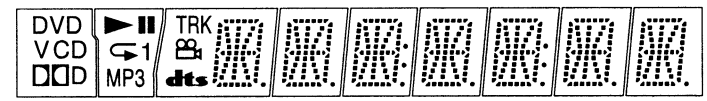
2-1. Self Check Mode Transition Processing

At the AC Power ON after reset of IF CON is released, while pressing with the MB-117 board are not connected to the IF-120 board, or while pressing the [■] key on the main unit with the IF CON in STANDBY mode, enter [RETURN] → [DISPLAY] (or [SETUP]) on the remote commander, and the main unit transits to the Self Check Mode.

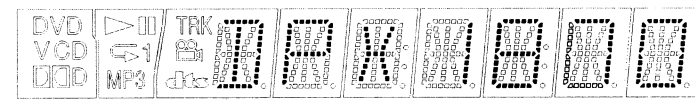
2-2. Operation of Auto Self Check

When the Self Check mode becomes active at the AC Power ON or by key input, the test display of the following steps (1) to (4) is repeated.

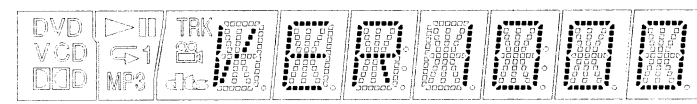
(1) FLD and LED all ON (for 5 seconds)



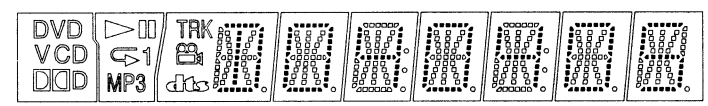
(2) MODEL display (for 2 seconds)



(3) Version display (for 2 seconds)



(4) ROM creation date display (for 2 seconds)



2-3. Each Self Check Function

Each Self Check function tests the FLD display, LED display, and key input.

Input Voltage [V]	IC404: Pin No. (Signal)			
	PIN ㉔ (AD1)	PIN ㉕ (O/C)	PIN ㉖ (STOP)	PIN ㉗
0 - 0.20	PLAY	OPEN/CLOSE	STOP	POWER
0.60 - 0.82	PAUSE	PROG	-	-
1.16 - 1.47	PREVIOUS	-	-	-
1.80 - 2.12	NEXT	-	-	-
2.48 - 2.70	-	-	-	-

DVP-LS785V

2-3-1. FLD and LED All ON

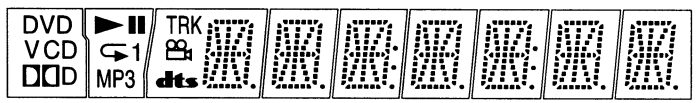
2-3-1-1. Transition Keys in Self Check Mode

- ⏏ key and ■ key on the main unit
- ← key on the remote commander

2-3-1-2. Operation and display

In this mode, all LEDs and all segments of FLD turn ON.

- **Example of FLD all ON**



2-3-2. Main Unit Key Code Display

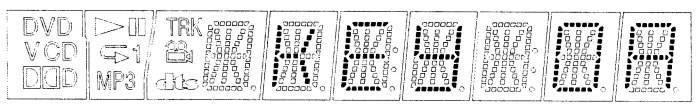
2-3-2-1. Transition Keys in Self Check Mode

- Keys on the main unit except keys transited in Self Check Mode

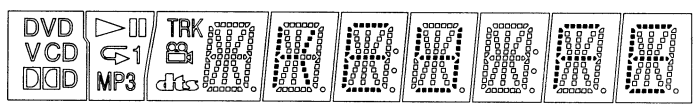
2-3-2-2. Operation and Display

When a key on the main unit is pressed in the Self Check mode, the name of that key code is displayed on the FLD. Also, code "NOTHING" is displayed when nothing is entered. Also, DVD, VCD segments turn on when a communication error occurred.

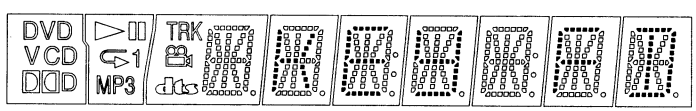
- **Key code display (at input of ▷ key, key code: 0Ah)**



- **At input of faulty voltage**



- **When key is pressed double**



2-3-3. Remote Commander

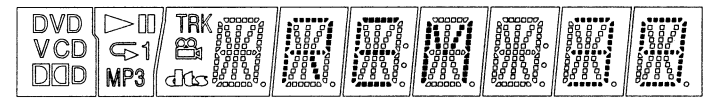
2-3-3-1. Transition Keys in Self Check Mode

- Remote commander keys except keys transited in Self Check Mode

2-3-3-2. Operation and Display

When a key on the remote commander is pressed in the Self Check Mode, the name of that key code is displayed on the FLD. Also, code "NOTHING" is displayed when nothing is entered. Also, VIDEO CD, DVD, and CD segments turn on when a communication error occurred.

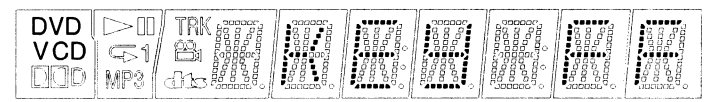
- **Remote commander key code display (at input of ▮▮ key, key code:39h)**



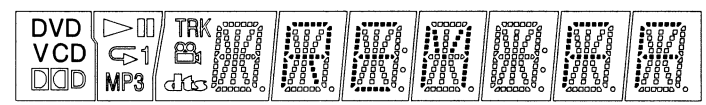
2-3-4. Communication Monitoring Display

The communication state is monitored and displayed while the key name on the main unit and the remote commander is displayed. When the communication to the System Controller failed, VIDEO CD, DVD, and CD segments turn on.

- **Communication error display (at no input of key and remote commander)**



- **Communication error display (at code display without input of the remote commander)**



2-3-5. FLD Anode Test Display and SHUTTLE Click Operation Test

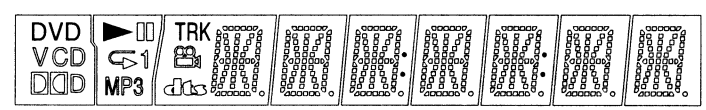
2-3-5-1. Transition Keys in Self Check Mode

- → key on the remote commander
- SHUTTLE on the remote commander during Anode Test display (This unit does not provide JOG/SHUTTLE, and therefore use another DVD remote commander having the JOG/SHUTTLE)

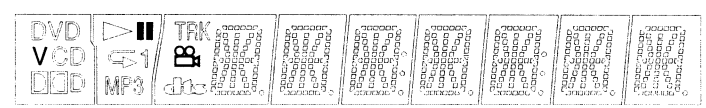
2-3-5-2. Operation and Display

The Self Check Mode transits to this mode when → key is entered. This tests whether each segment turns on individually. Only the first segment of each grid of FLD turns on, and each time the SHUTTLE is entered, the segment of each grid switched in order. When SHUTTLE input is clockwise, the segment switches in 1 - 2 -3 direction, or counterclockwise it switches in 3 - 2- 1 direction.

- **Display at the start of Anode Test**



↓ (Input in CW direction)



2-3-6. FLD Grid Test Display and SHUTTLE Click Operation Test

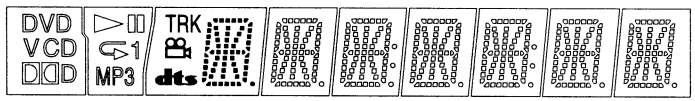
2-3-6-1. Transition Keys in Self Check Mode

- [↑]key on the remote commander
- SHUTTLE on the remote commander during Grid Test display
  (This unit does not provide JOG/SHUTTLE, and therefore use another DVD remote commander having the JOG/SHUTTLE)

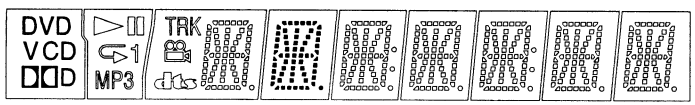
2-3-6-2. Operation and Display

The Self Check Mode transits to this mode when [↑]key is entered. This tests whether each grid turns on individually. The first grid only of FLD turns on and other grid turn off. Each time the SHUTTLE is entered, the grid is switched in order. When SHUTTLE input is clockwise, the grid switched in 1 - 2 - 3 direction, or counterclockwise it switches in 3 - 2 - 1 direction.

- **Display at the start of Grid Test**



↓ (Input in CW direction)



2-3-7. LED Test Display

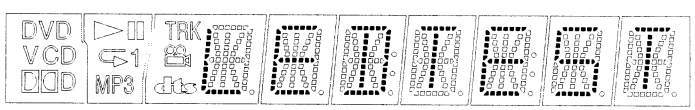
2-3-7-1. Transition Keys in Self Check Mode

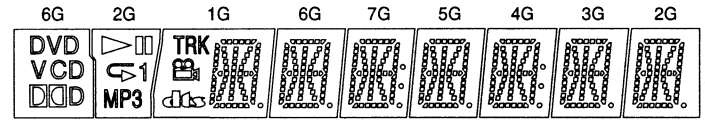
- [↓]key on the remote commander
- SHUTTLE on the remote commander during Grid Test display
  (This model does not provide JOG/SHUTTLE, and therefore use another DVD remote commander having the JOG/SHUTTLE)

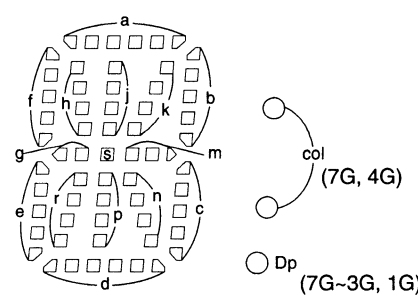
2-3-7-2. Operation and Display

LED is switched in order by the input JOG/SHUTTLE on the remote commander. Also, LED ON/OFF is switched by the input of same key as the function that turns on the LED conncerned.

- **FLD display during LED Test**







(7G~1G)

col (7G, 4G)

Dp (7G~3G, 1G)

ANODE CONNECTION

	7G	6G	5G	4G	3G	2G	1G
P1	col	DVD	-	col	-	▷	TRK
P2	-	V	-	-	-	II	
P3	-	CD	-	-	-	⊂	dts
P4	-	DD	-	-	-	1	-
P5	Dp	Dp	Dp	Dp	Dp	MP3	Dp
P6	a	a	a	a	a	a	a
P7	k	k	k	k	k	k	k
P8	j	j	j	j	j	j	j
P9	h	h	h	h	h	h	h
P10	b	b	b	b	b	b	b
P11	f	f	f	f	f	f	f
P12	m	m	m	m	m	m	m
P13	s	s	s	s	s	s	s
P14	g	g	g	g	g	g	g
P15	c	c	c	c	c	c	c
P16	d	d	d	d	d	d	d
P17	r	r	r	r	r	r	r
P18	p	p	p	p	p	p	p
P19	n	n	n	n	n	n	n
P20	e	e	e	e	e	e	e

SECTION 7
ELECTRICAL ADJUSTMENT

This section describes procedures and instructions necessary for adjusting electrical circuits in this unit.

Instruments required:

1) Color monitor TV
2) Oscilloscope 1 or 2 phenomena, band width over 100 MHz, with delay mode
3) Frequency counter (over 8 digits)
4) Digital voltmeter
5) Standard commander (RMT-D171P)
6) DVD reference disc
   HLX-501 (J-6090-071-A) (dual layer) (NTSC)
   HLX-503 (J-6090-069-A) (single layer) (NTSC)
   HLX-504 (J-6090-088-A) (single layer) (NTSC)
   HLX-505 (J-6090-089-A) (dual layer) (NTSC)
7) SACD reference disc
   HLXA-509 (J-6090-090-A)
8) Extention Cable (J-6090-107-A)

7-1. POWER SUPPLY ADJUSTMENT

Mode	E-E
Instrument	Digital voltmeter
EVER +5 V Check	
Test point	CN201 pin ④
Specification	5.0 ± 0.3 Vdc
SW +3.3 V Check	
Test point	CN201 pin ⑤
Specification	3.35 ± 0.2 Vdc
SW+5 V Check	
Test point	CN201 pin ⑥
Specification	$5.0 \pm {}^{+0.2}_{-0.3}$ Vdc
SW +8 V Check	
Test point	CN201 pin ①
Specification	8.0 ± 0.5 Vdc
EVER +11 V Check	
Test point	CN201 pin ③
Specification	$11.0 \pm {}^{+1.0}_{-0.5}$ Vdc
EVER –10 V Check	
Test point	CN201 pin ⑩
Specification	$-10.0 \pm {}^{+0.5}_{-1.0}$ Vdc

Checking method:

1) Confirm that each voltage satisfies the specification.

Note
Because the heatsink installed on the power supply board is a part of the primary side, never touch it to avoid electrical shock.

Abbreviation
ME : Middle East Model

DVP-LS785V

7-2. ADJUSTMENT OF VIDEO SYSTEM

1. Checking Video Level

<Purpose>

Checking Video Level the NTSC/PAL standard, and if not correct, the brightness will be too large or small.

Mode	HLX-504 play back
Signal	Color bars 100%
Test point	LINE OUT (VIDEO) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.05 Vp-p

Adjusting method:

1) In the Video Signal menu "1" Color Bar 100% play back.
2) Confirm that the Video Level is 1.0 ± 0.05 Vp-p.

Fig. 7-1.

2. Checking Progressive Video Output Level

<Purpose>

Check progressive video output level. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

Mode	HLX-504 play back
Signal	Color bars 100%
Test point	COMPONENT VIDEO OUT (Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.05 Vp-p

Adjusting method:

1) In the Video Signal menu "1" Color Bar 100% play back.
2) Confirm that the Y level is 1.0 ± 0.05 Vp-p.

Fig. 7-2.

3. Checking S Video Output S-Y

<Purpose>

Check S-terminal video output. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with a S-terminal cable.

Mode	HLX-504 play back
Signal	Color bars 100%
Test point	S VIDEO OUT (S-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.05 Vp-p

Checking method:

1) In the Video Signal menu "1" Color Bar 100% play back.
2) Confirm that the S-Y level is 1.0 ± 0.05 Vp-p.

Fig. 7-3.

4. Checking S Video Output S-C

<Purpose>

This checks whether the S-C satisfies the NTSC/PAL standard. If it is not correct, the colors will be too dark or light.

Mode	HLX-504 play back
Signal	Color bars 100%
Test point	S VIDEO OUT (S-C) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	A = 286 ± 30 mVp-p (NTSC) A = 300 ± 100 mVp-p (PAL)

Checking method:

1) In the Video Signal menu "1" Color Bar 100% play back.
2) Confirm that the S-C burst is "A".

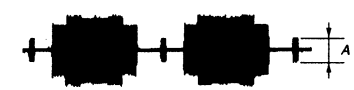


Fig. 7-4.

5. Checking Component Video Output Y

<Purpose>

This checks component video output Y. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

Mode	HLX-504 play back
Signal	Color bars
Test point	COMPONENT VIDEO OUT (Y) connector, (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.05 Vp-p

Checking method:

1) In the Video Signal menu "1" Color Bar 100% play back.
2) Confirm that the Y level is 1.0 ± 0.05 Vp-p.

Fig. 7-5.

6. Checking Component Video Output B-Y

<Purpose>

This checks component video output B-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	HLX-504 play back
Signal	Color bars
Test point	COMPONENT VIDEO OUT (P_B) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	A = 646 ± 50 mVp-p (US,Canadian)

Checking method:

1) In the Video Signal menu "1" Color Bar 100% play back.
2) Confirm that the B-Y level is A.

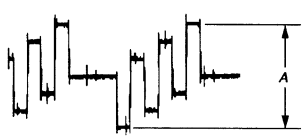


Fig. 7-6.

7. Checking Component Video Output R-Y

<Purpose>

This checks component video output R-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	HLX-504 play back
Signal	Color bars
Test point	COMPONENT VIDEO OUT (P_R) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	A = 646 ± 50 mVp-p (US,Canadian)

Checking method:

1) In the Video Signal menu "1" Color Bar 100% play back.
2) Confirm that the R-Y level is B.

Fig. 7-7.

SECTION 8
REPAIR PARTS LIST

8-1. EXPLODED VIEWS

NOTE:

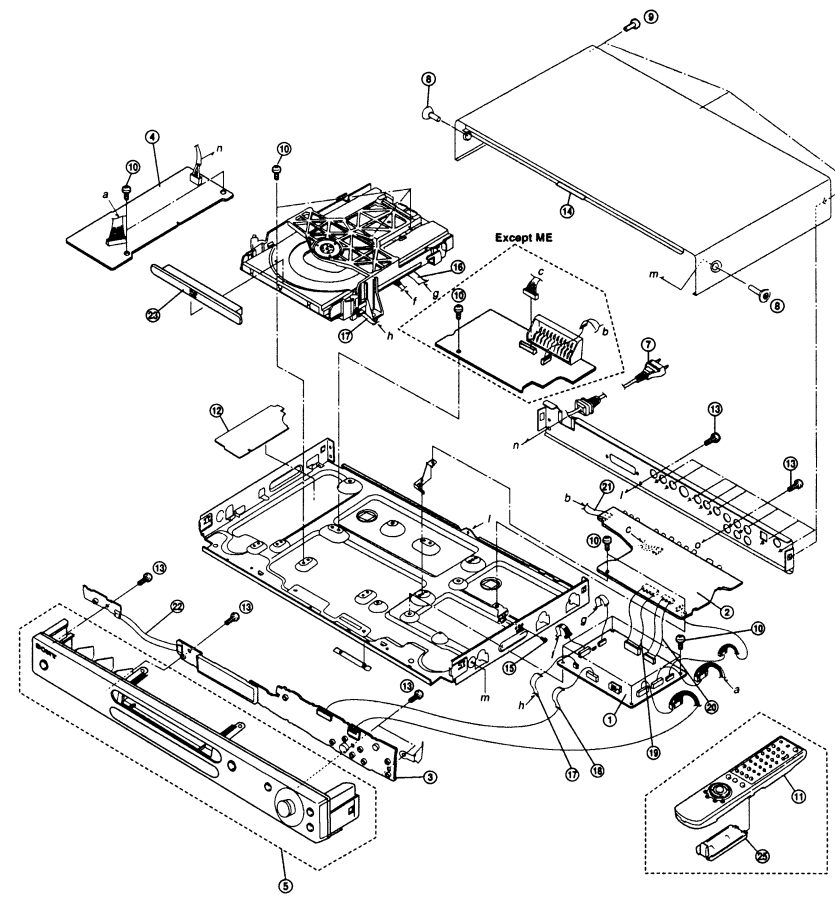
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Abbreviation
  AEP : AEP Model
  UK : UK Model
  ME : Middle East Model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

8-1-1. MAIN SECTION

ns : not supplied

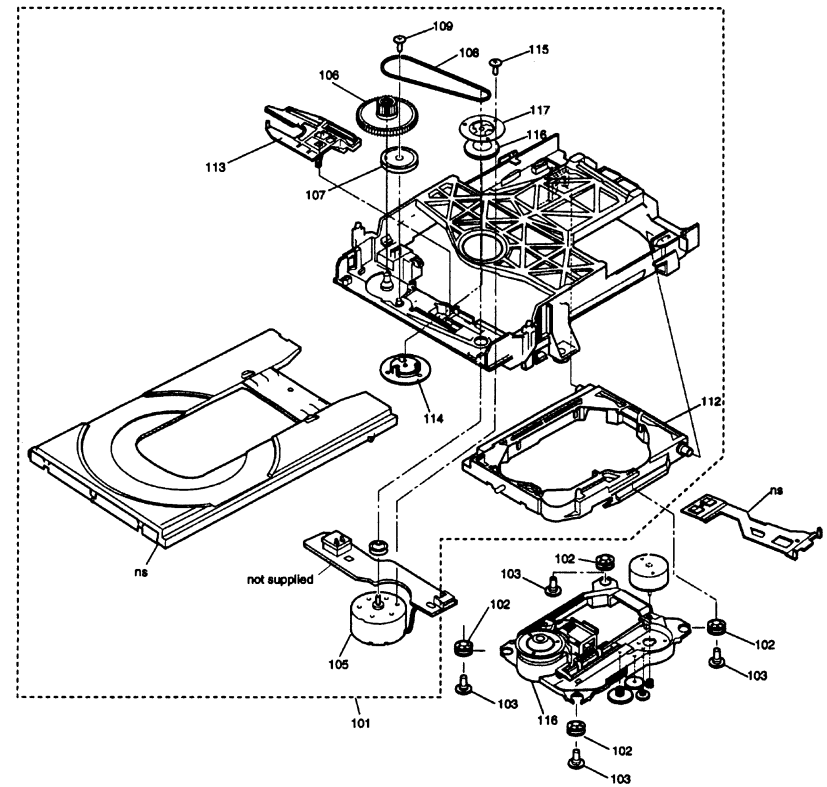


Ref. No.	Part No.	Description	Remark
1	A-1063-846-A	MB-117 BOARD COMPLETE (AEP,UK)	
2	A-1063-834-A	AV-086 BOARD COMPLETE (ME)	
2	A-1063-852-A	AV-086 BOARD COMPLETE (AEP,UK)	
3	A-1063-848-A	IF-120 BOARD COMPLETE (AEP,UK)	
3	A-1063-856-A	IF-120 BOARD COMPLETE (ME)	
⚠4	1-468-865-11	POWER SUPPLY BLOCK	
5	X-3954-160-3	PANEL ASSY, FRONT	
⚠7	1-828-450-11	POWER-SUPPLY CORD (AEP,ME)	
⚠7	1-828-454-11	POWER-SUPPLY CORD (UK)	
8	3-070-883-21	SCREW, TAPPING	
9	3-077-331-11	+BV3 (3-CR)	
10	3-077-331-21	+BV3 (3-CR)	
11	1-478-843-21	REMOTE COMMANDER (RMT-D171P)	
12	3-088-489-01	INSULATOR, PS	
13	3-087-053-01	+BVTP2.6 (3CR)	
14	3-831-441-11	CUSHION (F)	
15	2-055-460-11	SPECIAL SCREW (2.6X6, B)	
16	1-829-174-11	FLAT FLEXIBLE CABLE (FMO-013)	
17	1-829-386-11	FLAT FLEXIBLE CABLE (FMS-002)	
18	1-963-012-11	FLEXIBLE FLAT CABLE (FIM-006)	
19	1-963-013-11	FLEXIBLE FLAT CABLE (FMA-012)	
20	1-963-014-11	FLEXIBLE FLAT CABLE (FMA-013)	
21	1-963-016-11	FLEXIBLE FLAT CABLE (FAE-005) (AEP,UK)	
22	1-963-018-11	FLEXIBLE FLAT CABLE (FIP-003)	
23	3-088-810-01	COVER, TRAY	
24	3-089-066-11	CASE, TOP	
25	3-073-096-11	LID, BATTERY CASE	

Ref. No.	Part No.	Description	Remark

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8-1-2. MECHANISM DECK ASSEMBLY



Ref. No.	Part No.	Description	Remark
101	A-1054-450-A	LOADING ASSY (J8.5G)	
102	3-088-372-01	INSULATOR	
103	3-087-599-01	INSULATOR SCREW	
108	3-088-371-01	BELT	
109	4-674-137-11	SCREW (PTP2x5)	
115	4-974-725-11	SCREW (M 1.7 X 2.5) P	

Ref. No.	Part No.	Description	Remark
⚠116	8-820-237-06	KHM310AAA SERVICE ASSY	

8-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Not all of the parts for POWER BLOCK (HS12S2U) are listed.
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH
- Abbreviation
  ME : Middle East Model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-1063-846-A	MB-117 BOARD COMPLETE (AEP,UK)			
		**********			
		<CAPACITOR>			
C101	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C102	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C105	1-126-205-11	ELECT CHIP	47UF	20.00% 6.3V	
C106	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C107	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C108	1-162-964-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C109	1-162-964-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C110	1-162-964-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C111	1-162-964-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C112	1-126-205-11	ELECT CHIP	47UF	20.00% 6.3V	
C113	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C114	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C115	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C116	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C117	1-124-779-00	ELECT CHIP	10UF	20.00% 16V	
C118	1-124-779-00	ELECT CHIP	10UF	20.00% 16V	
C119	1-124-779-00	ELECT CHIP	10UF	20.00% 16V	
C120	1-165-908-11	CERAMIC CHIP	1UF	10% 10V	
C121	1-165-908-11	CERAMIC CHIP	1UF	10% 10V	
C122	1-165-908-11	CERAMIC CHIP	1UF	10% 10V	
C123	1-165-908-11	CERAMIC CHIP	1UF	10% 10V	
C124	1-165-908-11	CERAMIC CHIP	1UF	10% 10V	
C125	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C126	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C127	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C128	1-162-965-11	CERAMIC CHIP	0.0015UF	10.00% 50V	
C129	1-124-779-00	ELECT CHIP	10UF	20.00% 16V	
C130	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C131	1-125-838-11	CERAMIC CHIP	2.2UF	10% 6.3V	
C132	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C133	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C135	1-164-677-11	CERAMIC CHIP	0.033UF	10.00% 16V	
C136	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C137	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C138	1-162-964-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C139	1-162-919-11	CERAMIC CHIP	22PF	5.00% 50V	
C140	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C141	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C142	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C143	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C144	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C145	1-165-908-11	CERAMIC CHIP	1UF	10% 10V	
C146	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C147	1-165-176-11	CERAMIC CHIP	0.047UF	10.00% 16V	
C148	1-165-176-11	CERAMIC CHIP	0.047UF	10.00% 16V	
C149	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C150	1-124-779-00	ELECT CHIP	10UF	20.00% 16V	
C151	1-115-416-11	CERAMIC CHIP	0.001UF	5.00% 25V	
C152	1-162-915-11	CERAMIC CHIP	10PF	0.50PF 50V	
C153	1-162-915-11	CERAMIC CHIP	10PF	0.50PF 50V	
C154	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C155	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C156	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C158	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C159	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C160	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C161	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C162	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C163	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C164	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C167	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C170	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C171	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C172	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C173	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C174	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C175	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C176	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C177	1-126-205-11	ELECT CHIP	47UF	20.00% 6.3V	
C178	1-126-206-21	ELECT CHIP	47UF	20.00% 4V	
C179	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C180	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C181	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C182	1-127-715-91	CERAMIC CHIP	0.22UF	10% 16V	
C184	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C187	1-126-206-21	ELECT CHIP	47UF	20.00% 4V	
C188	1-127-715-91	CERAMIC CHIP	0.22UF	10% 16V	
C189	1-128-934-91	CERAMIC CHIP	0.33UF	20% 10V	
C190	1-126-205-11	ELECT CHIP	47UF	20.00% 6.3V	
C191	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C192	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C193	1-127-715-91	CERAMIC CHIP	0.22UF	10% 16V	
C195	1-127-715-91	CERAMIC CHIP	0.22UF	10% 16V	
C196	1-162-968-11	CERAMIC CHIP	0.0047UF	10.00% 50V	
C203	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C205	1-164-230-11	CERAMIC CHIP	220PF	5.00% 50V	
C206	1-164-230-11	CERAMIC CHIP	220PF	5.00% 50V	
C208	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C209	1-164-677-11	CERAMIC CHIP	0.033UF	10.00% 16V	
C210	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C211	1-164-677-11	CERAMIC CHIP	0.033UF	10.00% 16V	
C212	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C213	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C214	1-162-964-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C215	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C217	1-126-204-11	ELECT CHIP	47UF	20.00% 16V	
C218	1-124-779-00	ELECT CHIP	10UF	20.00% 16V	
C219	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C220	1-124-779-00	ELECT CHIP	10UF	20.00% 16V	
C221	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C222	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C223	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C224	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C225	1-162-964-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C226	1-162-964-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C233	1-162-968-11	CERAMIC CHIP	0.0047UF	10.00% 50V	
C301	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C302	1-125-891-11	CERAMIC CHIP	0.47UF	10.00% 10V	
C303	1-127-956-21	FILM CHIP	0.1UF	5% 16V	
C304	1-127-956-21	FILM CHIP	0.1UF	5% 16V	
C305	1-125-891-11	CERAMIC CHIP	0.47UF	10.00% 10V	
C306	1-100-669-11	ELECT	100UF	20% 10V	
C307	1-100-669-11	ELECT	100UF	20% 10V	
C402	1-126-204-11	ELECT CHIP	47UF	20.00% 16V	
C403	1-126-205-11	ELECT CHIP	47UF	20.00% 6.3V	
C405	1-126-210-21	ELECT CHIP	220UF	20.00% 4V	
C405	1-126-246-11	ELECT CHIP	220UF	20.00% 4V	
C407	1-115-416-11	CERAMIC CHIP	0.001UF	5.00% 25V	
C409	1-127-715-91	CERAMIC CHIP	0.22UF	10% 16V	
C410	1-127-715-91	CERAMIC CHIP	0.22UF	10% 16V	
C411	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
		<CONNECTOR>			
CN105	1-770-470-21	PIN, CONNECTOR (PC BOARD) 6P			
CN106	1-778-274-11	CONNECTOR, FFC/FPC 13P			
CN106	1-785-468-11	CONNECTOR, FFC/FPC 13P			
CN201	1-770-470-21	PIN, CONNECTOR (PC BOARD) 6P			
CN202	1-779-353-21	CONNECTOR, FFC/FPC 5P			
CN302	1-774-768-21	CONNECTOR, FFC/FPC 17P			
CN403	1-764-177-91	PIN, CONNECTOR 7P			

DVP-LS785V

MB-117

Ref. No.	Part No.	Description			Remark
		<DIODE>			
D301	8-719-914-44	DIODE DAP202K			
D302	8-719-914-44	DIODE DAP202K			
D303	8-719-914-44	DIODE DAP202K			
D403	8-719-914-44	DIODE DAP202K			
		<FERRITE>			
FB111	1-414-226-21	FERRITE	0UH		
FB112	1-414-226-21	FERRITE	0UH		
FB113	1-414-226-21	FERRITE	0UH		
FB114	1-414-226-21	FERRITE	0UH		
FB115	1-414-226-21	FERRITE	0UH		
FB319	1-216-864-11	SHORT CHIP	0		
FB401	1-469-324-21	FERRITE	0UH		
FB402	1-469-324-21	FERRITE	0UH		
FB403	1-469-324-21	FERRITE	0UH		
FB404	1-469-324-21	FERRITE	0UH		
FB405	1-469-324-21	FERRITE	0UH		
FB406	1-469-324-21	FERRITE	0UH		
FB1120	1-216-864-11	SHORT CHIP	0		
FB1121	1-216-864-11	SHORT CHIP	0		
FB1122	1-216-864-11	SHORT CHIP	0		
FB1123	1-216-864-11	SHORT CHIP	0		
FB1124	1-216-864-11	SHORT CHIP	0		
FB1125	1-216-864-11	SHORT CHIP	0		
FL101	1-234-177-21	FERRITE	0UH		
FL104	1-234-177-21	FERRITE	0UH		
FL105	1-234-177-21	FERRITE	0UH		
FL106	1-234-177-21	FERRITE	0UH		
FL107	1-234-177-21	FERRITE	0UH		
FL108	1-234-177-21	FERRITE	0UH		
FL401	1-234-177-21	FERRITE	0UH		
FL402	1-233-893-21	FILTER, CHIP EMI			
FL403	1-234-177-21	FERRITE	0UH		
		<IC>			
IC101		IC ROM			
IC102	6-706-727-01	IC CXD9804R			
IC104	6-704-893-01	IC GLT5640L16P-7TC			
IC105	6-702-302-01	IC TK11133CSCL-G			
IC106	8-759-667-18	IC PQ018EZ01ZP			
IC107	6-702-302-01	IC TK11133CSCL-G			
IC108	6-703-224-01	IC S-80828CNNB-B8NT2G			
IC201	6-704-524-01	IC FAN8036L			
IC301	6-704-222-01	IC AK4358VQ-L			
IC401	6-702-302-01	IC TK11133CSCL-G			
⚠ PS401	1-576-509-21	IC LINK	1A	50V	
⚠ PS402	1-576-509-21	IC LINK	1A	50V	

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
		<TRANSISTOR>			
Q101	6-550-006-01	TRANSISTOR UM6K1N-TN			
Q102	6-550-653-01	TRANSISTOR QST8TR			
Q103	8-729-424-59	TRANSISTOR UN2212-TX			
Q401	8-729-048-28	TRANSISTOR 2SD1766-T100-QR			
Q402	8-729-424-11	TRANSISTOR UN2111-TX			
Q402	8-729-424-08	TRANSISTOR UN2111			
Q403	8-729-230-49	TRANSISTOR 2SC2712-YG			
Q404	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX			
		<RESISTOR>			
R101	1-216-809-11	METAL CHIP	100	5%	1/10W
R104	1-216-864-11	SHORT CHIP	0		
R105	1-216-833-11	METAL CHIP	10K	5%	1/10W
R106	1-216-833-11	METAL CHIP	10K	5%	1/10W
R107	1-216-833-11	METAL CHIP	10K	5%	1/10W
R108	1-216-857-11	METAL CHIP	1M	5%	1/10W
R109	1-216-864-11	SHORT CHIP	0		
R110	1-216-841-11	METAL CHIP	47K	5%	1/10W
R111	1-216-809-11	METAL CHIP	100	5%	1/10W
R112	1-211-977-11	METAL CHIP	22	0.5%	1/10W
R113	1-211-977-11	METAL CHIP	22	0.5%	1/10W
R114	1-216-845-11	METAL CHIP	100K	5%	1/10W
R115	1-211-977-11	METAL CHIP	22	0.5%	1/10W
R116	1-216-821-11	METAL CHIP	1K	5%	1/10W
R117	1-216-841-11	METAL CHIP	47K	5%	1/10W
R118	1-216-801-11	METAL CHIP	22	5%	1/10W
R120	1-216-801-11	METAL CHIP	22	5%	1/10W
R121	1-216-801-11	METAL CHIP	22	5%	1/10W
R123	1-216-864-11	SHORT CHIP	0		
R124	1-216-841-11	METAL CHIP	47K	5%	1/10W
R126	1-216-864-11	SHORT CHIP	0		
R127	1-216-809-11	METAL CHIP	100	5%	1/10W
R127	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R134	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R135	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R136	1-216-835-11	METAL CHIP	15K	5%	1/10W
R138	1-216-845-11	METAL CHIP	100K	5%	1/10W
R141	1-202-930-11	METAL CHIP	750K	5%	1/10W
R141	1-218-916-11	METAL CHIP	750K	0.5%	1/10W
R142	1-216-845-11	METAL CHIP	100K	5%	1/10W
R143	1-216-809-11	METAL CHIP	100	5%	1/10W
R144	1-216-864-11	SHORT CHIP	0		
R146	1-216-805-11	METAL CHIP	47	5%	1/10W
R151	1-216-805-11	METAL CHIP	47	5%	1/10W
R152	1-216-864-11	SHORT CHIP	0		
R153	1-216-805-11	METAL CHIP	47	5%	1/10W
R155	1-216-805-11	METAL CHIP	47	5%	1/10W
R158	1-216-864-11	SHORT CHIP	0		
R160	1-216-805-11	METAL CHIP	47	5%	1/10W
R161	1-216-864-11	SHORT CHIP	0		
R164	1-216-809-11	METAL CHIP	100	5%	1/10W
R169	1-216-833-11	METAL CHIP	10K	5%	1/10W
R187	1-216-864-11	SHORT CHIP	0		
R189	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R190	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R191	1-216-821-11	METAL CHIP	1K	5%	1/10W
R192	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R193	1-216-821-11	METAL CHIP	1K	5%	1/10W
R195	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R196	1-216-864-11	SHORT CHIP	0		
R197	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R204	1-216-822-11	METAL CHIP	1.2K	5%	1/10W
R205	1-216-833-11	METAL CHIP	10K	5%	1/10W
R206	1-216-833-11	METAL CHIP	10K	5%	1/10W
R207	1-216-826-11	METAL CHIP	2.7K	5%	1/10W
R208	1-216-839-11	METAL CHIP	33K	5%	1/10W
R209	1-216-839-11	METAL CHIP	33K	5%	1/10W
R210	1-216-841-11	METAL CHIP	47K	5%	1/10W
R212	1-216-833-11	METAL CHIP	10K	5%	1/10W
R213	1-216-831-11	METAL CHIP	6.8K	5%	1/10W
R213	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R214	1-216-835-11	METAL CHIP	15K	5%	1/10W
R215	1-216-834-11	METAL CHIP	12K	5%	1/10W
R216	1-216-834-11	METAL CHIP	12K	5%	1/10W
R219	1-216-838-11	METAL CHIP	27K	5%	1/10W
R220	1-216-833-11	METAL CHIP	10K	5%	1/10W
R221	1-218-889-11	METAL CHIP	56K	0.5%	1/10W
R222	1-216-839-11	METAL CHIP	33K	5%	1/10W
R223	1-218-895-11	METAL CHIP	100K	0.5%	1/10W
R224	1-216-833-11	METAL CHIP	10K	5%	1/10W
R225	1-218-895-11	METAL CHIP	100K	0.5%	1/10W
R226	1-218-889-11	METAL CHIP	56K	0.5%	1/10W
R227	1-216-864-11	SHORT CHIP	0		
R228	1-216-864-11	SHORT CHIP	0		
R230	1-218-893-11	METAL CHIP	82K	0.5%	1/10W
R231	1-218-875-11	METAL CHIP	15K	0.5%	1/10W
R232	1-218-877-11	METAL CHIP	18K	0.5%	1/10W
R233	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R234	1-216-833-11	METAL CHIP	10K	5%	1/10W
R236	1-216-821-11	METAL CHIP	1K	5%	1/10W
R237	1-216-821-11	METAL CHIP	1K	5%	1/10W
R238	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R239	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R243	1-216-809-11	METAL CHIP	100	5%	1/10W
R246	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R247	1-216-821-11	METAL CHIP	1K	5%	1/10W
R306	1-216-864-11	SHORT CHIP	0		
R308	1-216-864-11	SHORT CHIP	0		
R314	1-216-809-11	METAL CHIP	100	5%	1/10W
R320	1-216-864-11	SHORT CHIP	0		
R401	1-216-833-11	METAL CHIP	10K	5%	1/10W
R402	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R403	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R404	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R407	1-216-833-11	METAL CHIP	10K	5%	1/10W
R408	1-216-821-11	METAL CHIP	1K	5%	1/10W
R409	1-216-839-11	METAL CHIP	33K	5%	1/10W
R410	1-216-841-11	METAL CHIP	47K	5%	1/10W
R412	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R414	1-216-295-91	SHORT CHIP	0		
R415	1-216-864-11	SHORT CHIP	0		
R1101	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1102	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R1103	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1104	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1105	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1107	1-216-864-11	SHORT CHIP	0		
R1108	1-216-864-11	SHORT CHIP	0		

Ref. No.	Part No.	Description			Remark
R1109	1-216-864-11	SHORT CHIP	0		
R1110	1-216-826-11	METAL CHIP	2.7K	5%	1/10W
R1111	1-216-864-11	SHORT CHIP	0		
R1112	1-216-864-11	SHORT CHIP	0		
R1126	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1129	1-216-845-11	METAL CHIP	100K	5%	1/10W
R1131	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1133	1-216-864-11	SHORT CHIP	0		
R1134	1-216-864-11	SHORT CHIP	0		
R1150	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R1151	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R1152	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R1161	1-216-864-11	SHORT CHIP	0		
R1162	1-216-864-11	SHORT CHIP	0		
R1163	1-216-864-11	SHORT CHIP	0		
R1164	1-216-864-11	SHORT CHIP	0		
R1167	1-216-864-11	SHORT CHIP	0		
R1168	1-216-817-11	METAL CHIP	470	5%	1/10W
		<CONDUCTOR>			
RB103	1-234-400-21	CONDUCTOR, NETWORK	(2010)		
RB104	1-234-400-21	CONDUCTOR, NETWORK	(2010)		
RB105	1-234-371-21	RE NETWORK 47X4	(1005)		
RB106	1-234-371-21	RE NETWORK 47X4	(1005)		
RB107	1-234-370-21	RE NETWORK 22X4	(1005)		
RB108	1-234-370-21	RE NETWORK 22X4	(1005)		
RB111	1-234-400-21	CONDUCTOR, NETWORK	(2010)		
RB112	1-234-370-21	RE NETWORK 22X4	(1005)		
RB113	1-234-370-21	RE NETWORK 22X4	(1005)		
		<VIBRATOR>			
X101	1-781-867-21	VIBRATOR, CRYSTAL			

A-1063-852-A	AV-086 BOARD COMPLETE (AEP,UK)	
A-1063-834-A	AV-086 BOARD COMPLETE (ME)	
	**********	
	<CAPACITOR>	
C103	1-107-826-11	CERAMIC CHIP 0.1UF 10.00% 16V
C105	1-104-660-91	ELECT 47UF 20.00% 16V
C105	1-126-947-11	ELECT 47UF 20.00% 35V
C108	1-162-970-91	CERAMIC CHIP (AEP,UK) 0.01UF 10.00% 25V
C109	1-162-970-91	CERAMIC CHIP (AEP,UK) 0.01UF 10.00% 25V
C113	1-107-826-11	CERAMIC CHIP 0.1UF 10.00% 16V
C114	1-104-660-91	ELECT 47UF 20.00% 16V
C144	1-126-947-11	ELECT 47UF 20.00% 35V
C115	1-107-826-11	CERAMIC CHIP 0.1UF 10.00% 16V
C116	1-104-660-91	ELECT 47UF 20.00% 16V
C116	1-126-947-11	ELECT 47UF 20.00% 35V
C117	1-107-826-11	CERAMIC CHIP 0.1UF 10.00% 16V
C201	1-126-935-11	ELECT 470UF 20.00% 16V
C202	1-126-960-11	ELECT 1UF 20.00% 50V
C208	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C209	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C210	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C211	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C212	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C214	1-162-977-11	CERAMIC CHIP 0.0018UF 10.00% 50V
C216	1-162-977-11	CERAMIC CHIP 0.0018UF 10.00% 50V
C220	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V
C221	1-162-977-11	CERAMIC CHIP 0.0018UF 10.00% 50V
C222	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C224	1-162-977-11	CERAMIC CHIP 0.0018UF 10.00% 50V
C225	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C227	1-162-977-11	CERAMIC CHIP 0.0018UF 10.00% 50V
C228	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C229	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C230	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C234	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C236	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C238	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V
C240	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C242	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C244	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C245	1-126-947-11	ELECT 47UF 20.00% 35V
C250	1-126-947-11	ELECT 47UF 20.00% 35V
C251	1-126-947-11	ELECT 47UF 20.00% 35V
C256	1-126-947-11	ELECT 47UF 20.00% 35V
C257	1-126-947-11	ELECT 47UF 20.00% 35V
C260	1-126-947-11	ELECT 47UF 20.00% 35V
C261	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V
C262	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V
C263	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V
C264	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V
C265	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V
C266	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V
C272	1-164-230-91	CERAMIC CHIP (AEP,UK) 220PF 5.00% 50V
C272	1-162-927-91	CERAMIC CHIP (ME) 100PF 5.00% 50V
C273	1-164-230-91	CERAMIC CHIP (AEP,UK) 220PF 5.00% 50V
C273	1-162-927-91	CERAMIC CHIP (ME) 100PF 5.00% 50V
C274	1-164-230-91	CERAMIC CHIP (AEP,UK) 220PF 5.00% 50V
C274	1-162-927-91	CERAMIC CHIP (ME) 100PF 5.00% 50V
C275	1-115-416-11	CERAMIC CHIP 0.001UF 5.00% 25V
C276	1-164-230-91	CERAMIC CHIP (AEP,UK) 220PF 5.00% 50V
C276	1-162-927-91	CERAMIC CHIP (ME) 100PF 5.00% 50V
C277	1-164-230-91	CERAMIC CHIP (AEP,UK) 220PF 5.00% 50V
C277	1-162-927-91	CERAMIC CHIP (ME) 100PF 5.00% 50V
C302	1-104-664-11	ELECT 47UF 20.00% 25V
C302	1-126-947-11	ELECT 47UF 20.00% 35V
C304	1-104-660-91	ELECT 47UF 20.00% 16V
C304	1-126-947-11	ELECT 47UF 20.00% 35V
C305	1-104-660-91	ELECT 47UF 20.00% 16V
C305	1-126-947-11	ELECT 47UF 20.00% 35V
C309	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V
C310	1-164-315-11	CERAMIC CHIP 470PF 5.00% 50V

Ref. No.	Part No.	Description			Remark
C315	1-162-977-11	CERAMIC CHIP	0.0018UF	10.00% 50V	
C316	1-162-977-11	CERAMIC CHIP	0.0018UF	10.00% 50V	
C317	1-164-315-11	CERAMIC CHIP	470PF	5.00% 50V	
C318	1-164-315-11	CERAMIC CHIP	470PF	5.00% 50V	
C320	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C322	1-164-315-11	CERAMIC CHIP	470PF	5.00% 50V	
C324	1-164-315-11	CERAMIC CHIP	470PF	5.00% 50V	
C327	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C328	1-162-970-11	CERAMIC CHIP	0.01UF	10.00% 25V	
C329	1-126-947-11	ELECT	47UF	20.00% 35V	
C330	1-126-947-11	ELECT	47UF	20.00% 35V	
C335	1-126-947-11	ELECT	47UF	20.00% 35V	
C336	1-126-960-11	ELECT	1UF	20.00% 50V	
C337	1-126-960-91	ELECT (AEP,UK)	1UF	20.00% 50V	
C338	1-162-927-11	CERAMIC CHIP	100PF	5.00% 50V	
C343	1-162-927-11	CERAMIC CHIP	100PF	5.00% 50V	
C347	1-126-924-11	ELECT	330UF	20.00% 10V	
C350	1-126-947-11	ELECT	47UF	20.00% 35V	
C351	1-126-947-11	ELECT	47UF	20.00% 35V	
C352	1-126-947-11	ELECT	47UF	20.00% 35V	
		<CONNECTOR>			
CN101	1-774-766-21	CONNECTOR, FFC/FPC 11P (AEP,UK)			
CN102	1-779-268-91	PIN, CONNECTOR 11P (AEP,UK)			
CN201	1-770-700-11	CONNECTOR, FFC/FPC 17P			
CN301	1-770-708-11	CONNECTOR, FFC/FPC 25P			
CN302	1-764-177-91	PIN, CONNECTOR 7P			
		<DIODE>			
D102	8-719-988-61	DIODE 1SS355TE-17 (AEP,UK)			
D104	8-719-071-15	DIODE HZM6.8ZWA1TL			
D107	8-719-071-15	DIODE HZM6.8ZWA1TL			
D301	8-719-914-43	DIODE DAN202K-T-146			
D301	8-719-914-43	DIODE DAN202K			
D302	8-719-988-61	DIODE 1SS355TE-17			
D302	8-719-988-61	DIODE 1SS355TE-17			
		<FERRITE>			
FB201	1-414-233-22	FERRITE	0UH		
FB202	1-414-233-22	FERRITE	0UH		
FB203	1-414-233-22	FERRITE	0UH		
FB204	1-414-233-22	FERRITE	0UH		
FB205	1-414-233-22	FERRITE	0UH		
FB206	1-414-233-22	FERRITE	0UH		
		<IC>			
IC101	8-759-662-86	IC NJM79M05DL1A(TE2)			
IC103	6-706-453-01	IC NJM2587V(TE2)			
IC201	6-705-404-01	IC BA4558F-HTE2			
IC202	6-705-404-01	IC BA4558F-HTE2			
IC203	6-705-404-01	IC BA4558F-HTE2			
IC301	6-600-009-01	IC TOTX179			
IC302	8-759-653-52	IC NJM78M05DL1A-TE1			
IC302	8-759-052-52	IC L78M05T-FA			
IC303	6-705-404-01	IC BA4558F-HTE2			

Ref. No.	Part No.	Description			Remark
		<INDUCTOR>			
L101	1-412-060-11	INDUCTOR	22UH		
L301	1-412-064-11	INDUCTOR	100UH		
		<WIRE>			
LP201	1-780-019-11	WIRE CLIP (AEP,UK)			
LP301	1-780-019-11	WIRE CLIP (AEP,UK)			
		<TRANSISTOR>			
Q105	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L (AEP,UK)			
Q105	8-729-230-49	TRANSISTOR 2SC2712-YG			
Q106	8-729-230-47	TRANSISTOR 2SA1162-YG-TE85L (AEP,UK)			
Q106	8-729-216-22	TRANSISTOR 2SA1162-G			
Q107	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L (AEP,UK)			
Q107	8-729-230-49	TRANSISTOR 2SC2712-YG			
Q108	8-729-230-47	TRANSISTOR 2SA1162-YG-TE85L (AEP,UK)			
Q108	8-729-216-22	TRANSISTOR 2SA1162-G			
Q111	8-729-421-19	TRANSISTOR UN2213			
Q112	8-729-424-08	TRANSISTOR UN2111			
Q201	8-729-421-19	TRANSISTOR UN2213			
Q202	8-729-027-53	TRANSISTOR DTC124TKA-T146			
Q203	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX			
Q204	6-550-137-01	TRANSISTOR2SD1938(F)-ST(TX).SO			
Q205	6-550-137-01	TRANSISTOR2SD1938(F)-ST(TX).SO			
Q206	6-550-137-01	TRANSISTOR2SD1938(F)-ST(TX).SO			
Q207	6-550-137-01	TRANSISTOR2SD1938(F)-ST(TX).SO			
Q208	6-550-137-01	TRANSISTOR2SD1938(F)-ST(TX).SO			
Q209	6-550-137-01	TRANSISTOR2SD1938(F)-ST(TX).SO			
Q301	8-729-230-50	TRANSISTOR 2SC2712-YG-TE85L			
Q301	8-729-230-49	TRANSISTOR 2SC2712-YG			
Q302	8-729-421-17	TRANSISTOR UN2213-TX			
Q302	8-729-421-19	TRANSISTOR UN2213			
Q303	8-729-027-53	TRANSISTOR DTC124TKA-T146			
Q304	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX			
Q305	8-729-421-17	TRANSISTOR UN2213-TX (AEP,UK)			
Q306	6-550-137-01	TRANSISTOR2SD1938(F)-ST(TX).SO			
Q307	6-550-137-01	TRANSISTOR2SD1938(F)-ST(TX).SO			
Q308	8-729-027-53	TRANSISTOR DTC124TKA-T146 (AEP,UK)			
Q309	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX (AEP,UK)			
Q310	8-729-049-31	TRANSISTOR 2SB710A-RTX			
Q311	8-729-230-49	TRANSISTOR 2SC2712-YG			
Q312	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX			
		<RESISTOR>			
R110	1-216-295-91	SHORT CHIP	0		
R112	1-216-295-91	SHORT CHIP	0		
R114	1-216-025-91	RES-CHIP (AEP,UK)	100	5% 1/10W	
R116	1-216-049-91	RES-CHIP (AEP,UK)	1K	5% 1/10W	
R117	1-216-025-91	RES-CHIP (AEP,UK)	100	5% 1/10W	
R118	1-216-295-91	SHORT CHIP	0		
R119	1-216-049-91	RES-CHIP (AEP,UK)	1K	5% 1/10W	
R121	1-216-295-91	SHORT CHIP	0 (AEP,UK)		

Ref. No.	Part No.	Description			Remark
R122	1-216-295-91	SHORT CHIP	0		
R123	1-216-025-91	RES-CHIP (AEP,UK)	100	5% 1/10W	
R124	1-216-049-91	RES-CHIP (AEP,UK)	1K	5% 1/10W	
R125	1-216-025-91	RES-CHIP (AEP,UK)	100	5% 1/10W	
R126	1-216-295-91	SHORT CHIP	0		
R127	1-216-049-91	RES-CHIP (AEP,UK)	1K	5% 1/10W	
R133	1-216-073-91	RES-CHIP (AEP,UK)	10K	5% 1/10W	
R133	1-216-295-91	SHORT CHIP	0 (ME)		
R134	1-216-061-91	RES-CHIP	3.3K	5% 1/10W	
R135	1-216-295-91	SHORT CHIP	0		
R140	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R141	1-208-755-11	METAL CHIP	75	0.5% 1/10W	
R143	1-208-755-11	METAL CHIP	75	0.5% 1/10W	
R146	1-208-755-11	METAL CHIP	75	0.5% 1/10W	
R147	1-208-755-11	METAL CHIP	75	0.5% 1/10W	
R148	1-208-755-11	METAL CHIP	75	0.5% 1/10W	
R149	1-208-755-11	METAL CHIP	75	0.5% 1/10W	
R153	1-216-295-91	SHORT CHIP	0		
R155	1-216-295-91	SHORT CHIP	0		
R158	1-216-295-91	SHORT CHIP	0		
R159	1-216-295-91	SHORT CHIP	0		
R160	1-216-295-91	SHORT CHIP	0		
R161	1-216-295-91	SHORT CHIP	0		
R167	1-216-295-91	SHORT CHIP	0		
R170	1-216-295-91	SHORT CHIP	0		
R201	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	
R202	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R203	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R204	1-216-089-91	RES-CHIP	47K	5% 1/10W	
R205	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R206	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R207	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R208	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R209	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R210	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R211	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R212	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R213	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R214	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R215	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R216	1-216-047-91	RES-CHIP	820	5% 1/10W	
R217	1-216-047-91	RES-CHIP	820	5% 1/10W	
R218	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R219	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R220	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R221	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R222	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R223	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R224	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R225	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R226	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R227	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R228	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R229	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R230	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	

Ref. No.	Part No.	Description			Remark
R231	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R232	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R233	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R234	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R235	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R236	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R237	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R238	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R239	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R240	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R241	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R242	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R243	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R244	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R245	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R246	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	
R247	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R248	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R249	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R250	1-216-041-00	RES-CHIP	470	5% 1/10W	
R251	1-216-041-00	RES-CHIP	470	5% 1/10W	
R252	1-216-041-00	RES-CHIP	470	5% 1/10W	
R253	1-216-041-00	RES-CHIP	470	5% 1/10W	
R254	1-216-041-00	RES-CHIP	470	5% 1/10W	
R255	1-216-041-00	RES-CHIP	470	5% 1/10W	
R256	1-216-089-91	RES-CHIP	47K	5% 1/10W	
R257	1-216-089-91	RES-CHIP	47K	5% 1/10W	
R258	1-216-089-91	RES-CHIP	47K	5% 1/10W	
R259	1-216-089-91	RES-CHIP	47K	5% 1/10W	
R260	1-216-089-91	RES-CHIP	47K	5% 1/10W	
R261	1-216-089-91	RES-CHIP	47K	5% 1/10W	
R262	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	
R263	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	
R264	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	
R265	1-216-065-91	RES-CHIP (AEP,UK)	4.7K	5% 1/10W	
R266	1-216-065-91	RES-CHIP (ME)	4.7K	5% 1/10W	
R267	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	
R268	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	
R269	1-216-097-11	RES-CHIP	100K	5% 1/10W	
R302	1-216-021-00	RES-CHIP	68	5% 1/10W	
R303	1-216-033-00	RES-CHIP	220	5% 1/10W	
R304	1-216-049-11	RES-CHIP	1K	5% 1/10W	
R305	1-216-049-11	RES-CHIP	1K	5% 1/10W	
R306	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R307	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R308	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R309	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R310	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R311	1-208-781-11	METAL CHIP	910	0.5% 1/10W	
R312	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R313	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R314	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R315	1-208-782-11	METAL CHIP	1K	0.5% 1/10W	
R316	1-216-295-91	SHORT CHIP	0		
R318	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R319	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R320	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	

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Ref. No.	Part No.	Description			Remark
R321	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R322	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R323	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R324	1-216-053-00	RES-CHIP	1.5K	5% 1/10W	
R325	1-208-794-11	METAL CHIP	3.3K	0.5% 1/10W	
R326	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	
R327	1-216-065-91	RES-CHIP (AEP,UK)	4.7K	5% 1/10W	
R328	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R329	1-216-041-00	RES-CHIP	470	5% 1/10W	
R330	1-216-041-00	RES-CHIP	470	5% 1/10W	
R331	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R332	1-216-089-91	RES-CHIP	47K	5% 1/10W	
R333	1-216-089-91	RES-CHIP	47K	5% 1/10W	
R334	1-216-089-91	RES-CHIP	47K	5% 1/10W	
R335	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R336	1-216-073-91	RES-CHIP (AEP,UK)	10K	5% 1/10W	
R337	1-216-065-91	RES-CHIP	4.7K	5% 1/10W (ME)	
R338	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	
R339	1-216-073-91	RES-CHIP (AEP,UK)	10K	5% 1/10W	
R341	1-216-065-91	RES-CHIP (AEP,UK)	4.7K	5% 1/10W	
R342	1-216-073-91	RES-CHIP (AEP,UK)	10K	5% 1/10W	
R343	1-216-097-11	RES-CHIP	100K	5% 1/10W	
R344	1-216-097-11	RES-CHIP (AEP,UK)	100K	5% 1/10W	
R346	1-216-041-00	RES-CHIP	470	5% 1/10W	
R347	1-216-041-00	RES-CHIP	470	5% 1/10W	
R348	1-216-041-00	RES-CHIP	470	5% 1/10W	
R349	1-216-041-00	RES-CHIP	470	5% 1/10W	
R350	1-216-067-00	RES-CHIP	5.6K	5% 1/10W	
R351	1-216-097-11	RES-CHIP	100K	5% 1/10W	
R352	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R354	1-216-041-00	RES-CHIP	470	5% 1/10W	
R355	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R356	1-216-097-11	RES-CHIP	100K	5% 1/10W	

	A-1063-848-A	IF-120 BOARD COMPLETE (AEP,UK)
	A-1063-856-A	IF-120 BOARD COMPLETE (ME)
		**********
		<CAPACITOR>
C403	1-127-972-21	FILM CHIP 0.015UF 5% 50V
C406	1-117-681-11	ELECT CHIP 100UF 20.00% 16V
C407	1-117-681-11	ELECT CHIP 100UF 20.00% 16V
C408	1-126-204-11	ELECT CHIP 47UF 20.00% 16V
C409	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V
C410	1-127-972-21	FILM CHIP 0.015UF 5% 50V
C412	1-115-339-11	CERAMIC CHIP 0.1UF 10.00% 50V
C413	1-126-400-11	ELECT CHIP 22UF 20.00% 35V
C414	1-162-964-11	CERAMIC CHIP 0.001UF 10.00% 50V
C415	1-115-339-11	CERAMIC CHIP 0.1UF 10.00% 50V
C416	1-107-826-11	CERAMIC CHIP 0.1UF 10.00% 16V
C418	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V

Ref. No.	Part No.	Description			Remark
C419	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
C420	1-107-826-11	CERAMIC CHIP	0.1UF	10.00% 16V	
		<CONNECTOR>			
CN401	1-506-486-11	PIN, CONNECTOR 7P			
CN402	1-794-506-11	CONNECTOR, FFC/FPC 13P			
CN403	1-779-000-11	CONNECTOR, FFC/FPC 5P			
		<DIODE>			
D402	6-500-887-01	DIODE CL-191HB1-D-T			
D403	6-500-936-01	DIODE CL-194WE-D-T			
D404	6-500-887-01	DIODE CL-191HB1-D-T			
D406	8-719-041-97	DIODE MA113-(TX)			
D407	8-719-041-97	DIODE MA113-(TX)			
D408	8-719-041-97	DIODE MA113-(TX)			
D409	8-719-041-97	DIODE MA113-(TX)			
D410	8-719-422-31	DIODE MA8047-M			
		<IC>			
IC404	6-804-270-01	IC 86CK74AFG5NF4(M			
IC406	6-703-744-01	IC GP1UE26SXKOF			
IC408	6-704-114-01	IC S-80828CNUA-B8NT2G			
		<INDUCTOR>			
L401	1-456-706-21	INDUCTOR	82UH		
		<FLUORASCENT>			
ND401	1-518-984-11	VACUUM FLUORASCENT DISPLAY			
		<TRANSISTOR>			
Q401	8-729-424-08	TRANSISTOR UN2111			
Q402	8-729-421-22	TRANSISTOR UN2211			
Q403	8-729-056-46	TRANSISTOR 2SC5053T100Q			
Q404	8-729-056-46	TRANSISTOR 2SC5053T100Q			
Q405	8-729-424-08	TRANSISTOR UN2111			
Q406	8-729-421-22	TRANSISTOR UN2211			
Q407	8-729-424-08	TRANSISTOR UN2111			
Q408	8-729-421-22	TRANSISTOR UN2211			
		<RESISTOR>			
R401	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	
R402	1-216-033-00	RES-CHIP	220	5% 1/10W	
R403	1-216-071-00	RES-CHIP	8.2K	5% 1/10W	
R404	1-216-063-91	RES-CHIP	3.9K	5% 1/10W	
R406	1-216-059-00	RES-CHIP	2.7K	5% 1/10W	
R407	1-216-059-00	RES-CHIP	2.7K	5% 1/10W	
R408	1-216-864-11	SHORT CHIP	0		
R409	1-216-037-00	RES-CHIP	330	5% 1/10W	
R410	1-216-017-91	RES-CHIP	47	5% 1/10W	
R411	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R411	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R412	1-216-033-00	RES-CHIP	220	5% 1/10W	
R417	1-216-083-00	RES-CHIP	27K	5% 1/10W	

IF-120 **POWER BLOCK (SRV1578WW)**

Ref. No.	Part No.	Description			Remark
R418	1-216-097-11	RES-CHIP	100K	5% 1/10W	
R419	1-216-025-11	RES-CHIP	100	5% 1/10W	
R420	1-216-025-11	RES-CHIP	100	5% 1/10W	
R421	1-216-025-11	RES-CHIP	100	5% 1/10W	
R422	1-216-025-11	RES-CHIP	100	5% 1/10W	
R423	1-216-025-11	RES-CHIP	100	5% 1/10W	
R424	1-216-025-11	RES-CHIP	100	5% 1/10W	
R425	1-216-025-11	RES-CHIP	100	5% 1/10W	
R426	1-216-025-11	RES-CHIP	100	5% 1/10W	
R428	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R430	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R431	1-216-013-00	RES-CHIP	33	5% 1/10W	
R432	1-216-027-00	RES-CHIP	120	5% 1/10W	
R434	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R436	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R437	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R438	1-216-057-00	RES-CHIP	2.2K	5% 1/10W	
R439	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R441	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R442	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R443	1-216-073-91	RES-CHIP	10K	5% 1/10W	
R444	1-216-073-91	RES-CHIP	10K	5% 1/10W	
		<SWITCH>			
S402	1-771-410-21	SWITCH, TACT			
S404	1-771-410-21	SWITCH, TACT			
S407	1-771-410-21	SWITCH, TACT			
S408	1-771-410-21	SWITCH, TACT			
S411	1-771-410-21	SWITCH, TACT			
S412	1-771-410-21	SWITCH, TACT			
S413	1-771-410-21	SWITCH, TACT			
		<CONVERTER>			
T401	1-443-199-11	DC-DC CONVERTER TRANSFORMER			
		<VIBRATOR>			
X401	1-781-472-21	VIBRATOR, CERAMIC			

⚠	1-468-865-11	POWER BLOCK (SRV1578WW)
		**********

Ref. No.	Part No.	Description	Remark
		ACCESSORIES	
		**********	
	1-751-271-71	CORD, CONNECTION (AV)	
	2-059-563-23	MANUAL, INSTRUCTION (FRENCH, GERMAN, DUTCH) (AEP)	
	2-059-563-33	MANUAL, INSTRUCTION (ITALIAN, SPANISH) (AEP)	
	2-059-563-13	MANUAL, INSTRUCTION (ENGLISH) (UK)	
	2-059-561-32	MANUAL, INSTRUCTION (ENGLISH) (ME)	
	1-478-843-21	REMOTE COMMANDER (RMT-D171P)	

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.